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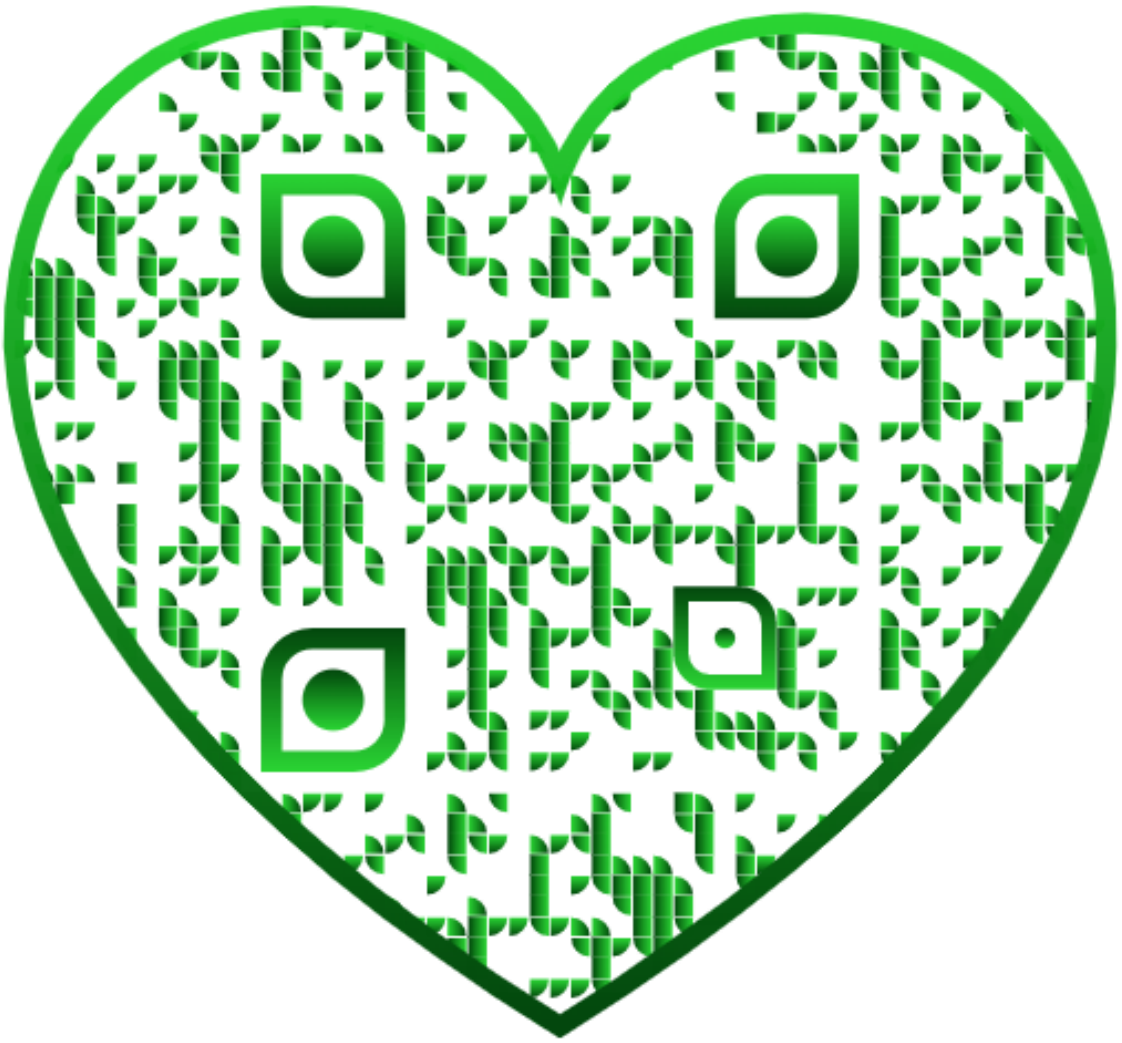

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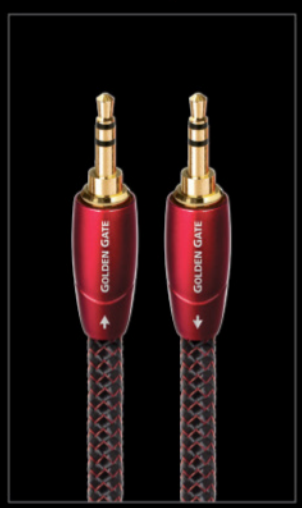


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# Seeing Red?

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William E. Low
Founder

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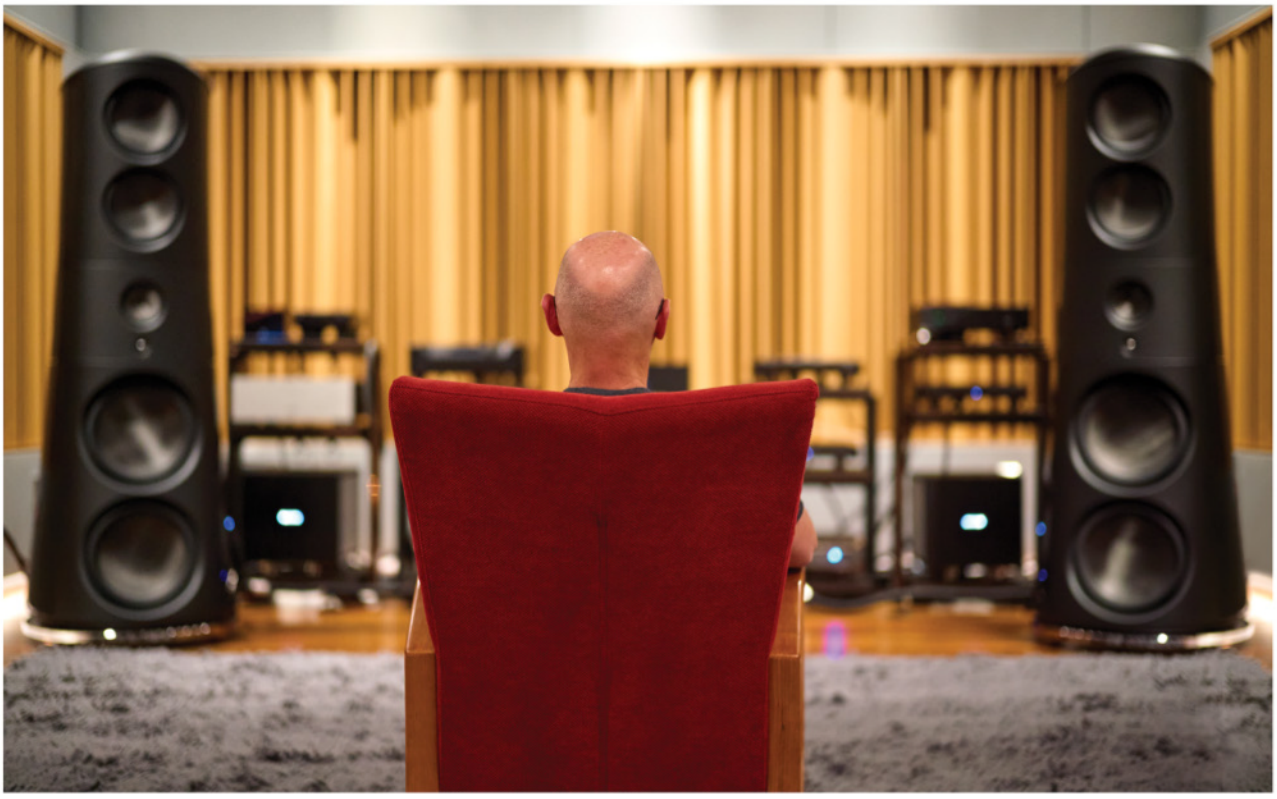
# PS AUDIO FR30 LOUDSPEAKER

**After nearly 50 years as an electronics specialist, PS Audio enters the crowded loudspeaker market. Anthony H. Cordesman explains why the innovative FR30 was worth the wait.**



"I spent about eight hours listening to the M9 over two days... Once the listening commenced, it was immediately apparent that the M9 was different from any other speaker I've heard... The sound had the remarkable quality of appearing from nowhere, completely untethered to the speakers. This characteristic was certainly related to the M9's completely silent background as well as its stunning spatial presentation, with wide staging and continuousness of imaging. But the M9's disappearing act went beyond these usual tropes. The impression of hearing music rather than a hi-fi system was profound. The M9 is so transparent to the music that I had the odd sensation of the speakers not being the source of the sound. Opening my eyes at the end of a piece of music, I was sometimes momentarily startled to see this pair of giants standing in front of me... All the performances took on a heightened sense of urgency, energy, and spontaneous music-making in a way that was absolutely thrilling... the speaker has a complete and unwavering sense of effortless ease on all music. It can scale the heights of the most demanding music without a hint of congestion or confusion. It's just a natural, organic, immensely involving sound on any type of music and at any listening level.

Overall, I have to say that the Magico M9 is the best-sounding loudspeaker I've heard. It represents the ultimate realization of the accumulated knowledge and sophisticated technologies Magico has developed over the past 25 years, along with some remarkable innovations that push the M9's performance to an unprecedented level."

Robert Harley, Editor-in-Chief, *The Absolute Sound*

**Harley, Robert. "Magico Swings for the Fences: The M9 Loudspeaker" – The Absolute Sound Blog, May 16, 2022. https://www.theabsolutesound.com/articles/magico-swings-for-the-fences-the-m9-loudspeaker.**

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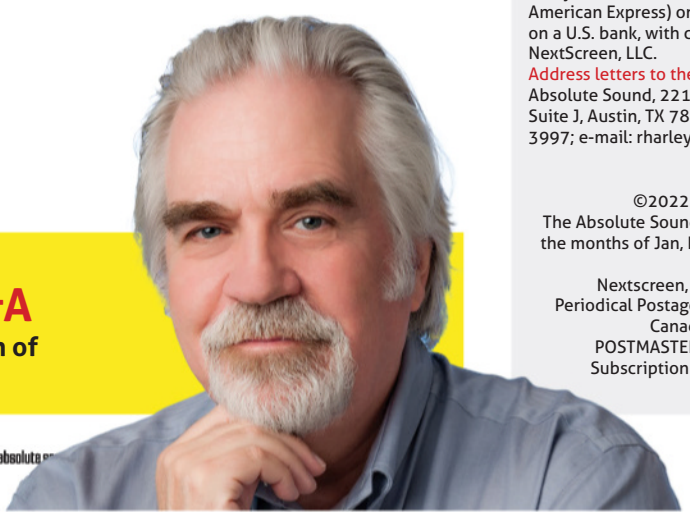


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# Letters

Email the Editor: rharley@nextscreen.com or: TAS, 2211 Denton Dr., Ste. J, Austin, Texas 78758

## A Moment of Grace

Jonathan Valin's piece on Lloyd Walker [Issue 327] is as fine a memorial tribute as I have read. I never knew Mr. Walker but, after reading Jonathan's piece, I wish I had. While my political leanings seem to align better with the author's, his affection for his subject reflects the rare quality of focusing on what's most important. In this, his finely rendered portrait brought to me a message that went beyond the man whose life he chronicled: that it is possible to bridge most divides to form a connection of respect and caring by following your heart first.

Thanks for this moment of grace. We sure need them.

**Ned Dodds**

## Congratulations on Michael Fremer

As a very long-time reader of *The Absolute Sound*, I'm writing to congratulate you on the addition of Michael Fremer to the masthead. I've been reading Mikey since he was first with *The Absolute Sound* [in the 1980s] and *The Tracking Angle*, and then with that other mag. His insight into analog is a great asset for your magazine and will help buttress an already stellar cast of writers. As the digital world befell us years ago Mikey carried the analog banner. That's not to say JV did not invoke constant opinions on analog during those times, but Mikey never wavered.

So, it is with great enthusiasm I wait to see what Mikey brings to TAS. Congratulations.

**Jeffrey Sadowsky**

*RH replies: I, along with the entire editorial and publishing teams, are thrilled to welcome Michael back to our pages. His first review—a world exclusive on an exciting new turntable—will appear in the December issue. Michael will also be creating videos of factory tours, show reports, product previews, and designer interviews on* The Absolute Sound*'s YouTube channel.*

## A Thousand Thanks

I was happy upon receiving Issue 328 and seeing reviews by two of my favorite TAS writers, Robert E. Greene and Paul Seydor. Mr. Greene's review of the Pear Audio Blue Odar turntable is certainly intriguing, but I've so far resisted placing an order for one. A Denon DL-103-D phono cartridge, on the other hand, has been sitting unused in my analog-stuff drawer for some years. I've been satisfied with my moving-magnet cartridges and not motivated to mount it until reading Mr. Seydor's review.

But as soon as I finished the review, I did just that—mounted it, adjusted the gain and loading in my preamp, and set the tracking force at 2.5 grams. Oh, my goodness. Seeing that Paul used the AU-320 step-up transformer during his review, I immediately ordered one. Again, oh, my goodness. Today I'll order the Denon Aluminum Body Cap. A thousand thanks to Mr. Seydor, along with one question: Could I interest you in a fair-sized library of CDs—mostly classical—at a bargain price?

**Ned Mast**

## Recognizing David Hafler's Brilliant Design

I was delighted to read Anthony H. Cordesman's review of the new Audio by Van Alstine DVA M225 monoblock power amplifier in Issue 327. As AHC explained, this was a design based ultimately on a successful Van Alstine amplifier from the early 1980s, the MOSFET ST-120—a deeply modified Dynaco ST-120 (David Hafler's first solid-state stereo amp from 1966). By chance, recently, as AHC reported, the people at Van Alstine looked again at their 40-year-old amp, saw new and ready ways to upgrade it with better-performing parts, then, based on that work, offered a new series of stereo amps at 60, 100, and 200Wpc ranging in price from $999 to $2200.

All these amps have garnered wide praise. Now, Van Alstine offers the DVA M225, a deluxe version of the 200-watt amp with balanced circuitry and enhanced power regulation for $3400 per pair.

What delights is to hear about how a careful reassessment of a classic design might result in what AHC can call "one of the best, most neutral, and most revealing power amplifiers around within its power limits at any price." The Van Alstine M225 succeeds not because its designers spared no expense in its manufacture. Instead, they recognized the simplicity and brilliance of Hafler's original, then happily for us, kept on refining it.

**Jud Emerick**

## TAS More Than Just a Magazine

I'm just finding the time to catch up on some reading over the 4th of July holiday weekend and came across your [RH's] article [From the Editor] in the March issue, on "The Law of Accelerating Returns." My experience echoes yours. But there seems to be a fine line between throwing money at a system and benefiting from the law of accelerating returns.

The best example I have personally experienced occurred a couple of years ago when, after careful consideration, I decided to exceed my budget and purchase the Marantz SA-10 SACD player/DAC. Up until adding the SA-10 to my system I had regularly fiddled with different components in the system and always felt like something could be just a little bit better if I just had the right components. Since I've added the SA-10 I have spent more time

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2022

# Letters

enjoying the music and haven't had to worry about if I will have enough money to buy that next new thing, as the SA-10 just helped the rest of the equipment in the system live up to their full potential.

I think the trick of navigating this fine line is having a source of information that can be trusted to assist in assembling a system based on others' experiences, as well as some unbiased experts to help make intelligent purchases. For someone like me who doesn't have the resources to just keep throwing money at my system, I need help when making those expensive purchases so that I can benefit from the law of accelerating returns rather than suffering from the law of diminishing returns.

Thank you to *The Absolute Sound*, who over the years has provided the experience and guidance not only through the printed pages but also through email correspondence. It has been a fine relationship for me! Much more than just a magazine.

**Bob Walker**

## What, No Volti Audio?

While I realize that not every speaker maker can be included in the directory, I am interested in how those decisions are made. In particular, only a few companies are making horn speakers and many of those are very high priced such as the offerings of Avantgarde Acoustic. Then you have a company like Volti Audio which makes horn speakers at a moderate price point. those speakers have been well reviewed (but not by TAS), yet they are not included in the Ultimate Directory.

**Jim Luehman**

## What, No Open-Baffle Speakers?

Why were there no open baffle speakers listed in the *Ultimate Directory to Loudspeakers and Cables*? When will *The Absolute Sound* start publishing detailed reviews of open-baffle speakers? Why has this type of design been ignored?

**Tony Roubound**

*RH replies: Thank you for your letters. Volti Audio is certainly worthy of inclusion, but frankly they weren't on our radar. It would be beneficial to readers to include companies that make affordably priced horn loudspeakers, and we'll add them to next year's Directory. We'll also include some open-baffle designs.*

**Erratum:** *It appears that we jumped the gun on the cover of last issue's TAS. JV's review of the Magnepan LRS+ loudspeaker, announced on the 330 cover, is in* this *issue, not in Issue 330. Our apologies to our readers for the mistake.*

**UPCOMING IN TAS 332 AND 333**

**ISSUE 332**
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**ISSUE 333**
***The Absolute Sound's* High-End Hall of Fame—Three New Inductees**

**Digital Focus**
- **dCS Vivaldi Apex DAC**
- **Metronome DSC network player**
- **Sonus faber Omnia**
- **Linn Organik DAC in the Klimax DSM network player**
- **BACCH-SP 3D stereo-image processing**

**Synergistic SRX cable, power cord, and interconnect**
**Burmester 159 monoblock power amplifier**
**Michael Fremer on the SME Model 60 turntable**
**Sonus faber Omnia tabletop system**
**HiFi Rose RA180 integrated amplifier**
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# Guest Editorial

> If MoFi is as convinced of the sonic superiority of digital mastering as it claims to be, why conceal the fact?

# The MoFi Mess

**A fresh scandal has cropped up in the contentious** little world of high-end audio—and it's cropped up in a place you wouldn't expect. Turns out that Mobile Fidelity, the world-famous company that has long claimed to source its celebrated LP reissues from verified "original masters," has actually been using digital copies of those original mastertapes rather than the tapes themselves (or first-gen copies) to master its One-Step LPs. Where record lovers thought they were buying all-analog vinyl ("AAA," to use the old SPARS code), they were actually being sold digitally duplicated and mastered recordings ("ADA")—and at premium prices. To make matters worse, it appears the digital wool wasn't just pulled over the eyes of One-Step buyers; MoFi has been doing this very same thing (or something like it) on many of its "Original Master" releases for better than a decade. (For a great deal more on this subject, please turn to our exclusive interview with MoFi's President Jim Davis on pp. 20 and 22.)

I don't know—and won't know until MoFi comes out with the complete source list it has promised—exactly which of its reissues were digitally copied and mastered prior to the One-Steps, but I do know, *per* our Michael Fremer, that anything sourced from Sony/Columbia (e.g., Bob Dylan, Michael Jackson, Santana, Blood, Sweat & Tears, Miles Davis, Thelonious Monk—to name a few) was likely digitally processed, since Sony was unwilling to send its original mastertapes to MoFi's Sebastopol, CA, facility for production.

This is an embarrassing mess, and MoFi needs to fix it.

Of course, calling its products "Original Master Recordings" isn't a fib. The company *was* working from verified original analog mastertapes (or at least the closest things its engineers could find to the original masters); it was just copying them (or many of them) to hi-res digital files—and didn't say so. Until the company recently changed its wording online and in its archives, I couldn't find anything in MoFi's literature, dating back to before the turn of the millennium, that suggests a "digital step" in the mastering process. Indeed, Mobile Fidelity's publicity has, I think, deliberately left the impression that everything is accomplished in the analog domain. Any way you look at it, this was not full disclosure.

However, there is an important proviso to the MoFi story—at least there is for listeners like me. To wit, I have liked and continue to like many recordings pressed to vinyl that were not just mastered but also *recorded* digitally. (Take Dire Straits' *Brothers in Arms*, or Diana Krall's *Turn Up the Quiet*, or Hans Theessink's *Jedermann Remixed—The Soundtrack*, among numerous examples.) Though I've tended to prefer all-analog recordings, I've never been an "AAA" purist. If a record sounds great—and a whole bunch of audiophile LPs that were recorded, mixed, and mastered digitally do—I couldn't care less about its provenance. There is a magic about vinyl playback that can bring even the most primitive digital (or analog) recording quite a bit closer to the sound and pleasure of the real thing.

So…the only bone I have to pick with MoFi isn't about the way it masters its LPs. It's about the less than forthright way it has advertised and promoted them. If MoFi is as convinced of the sonic superiority of digital duplication and mastering as Jim Davis claims it is (once again, see pp. 20 and 22), why conceal the fact?

My bottom line is this: After MoFi spent decades keeping the LP alive and kicking—releasing many, many sonic triumphs over that span (including several of the One-Steps)—it would be worse than ungrateful of audiophiles not to show some charity here. If the company continues to come clean about what it's done (and on July 27, 2022, Davis took a big first step in that direction [see p. 18], publicly apologizing for MoFi's "vagueness" about its mastering chain, pledging future transparency about the provenance of its products, and promising to "backfill source information on previous releases," which it has already started to do), I, for one, am willing to let the matter drop. As I said, when recordings sound as good as many MoFi LPs, it makes little difference how they were mastered.

**Jonathan Valin**

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# The MoFi Controversy

## The Proof of the Pudding

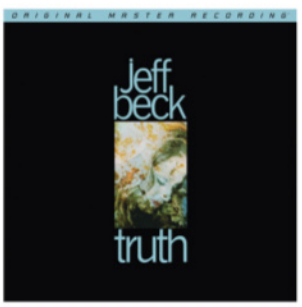
Robert Harley

**I was as surprised as everyone else to learn that Mobile** Fidelity's LP mastering process includes a digital stage. Although MoFi has never expressly stated that it cuts its lacquers from analog tape, it was generally assumed that the company's "Original Master Recordings" were all-analog. It turns out that MoFi's current standard practice is to transfer the analog mastertape to DSD and cut the lacquer from the digital file.

This digital mastering chain is also used to produce MoFi's One-Step LPs, which have received nearly universal acclaim for their sound quality. Some One-Step purchasers are dismayed to learn of the digital conversion, with several commentators suggesting that One-Step LPs are nothing more than overpriced DSD files—and potentially inferior versions at that.

Although MoFi should have been more transparent about the provenance of its sources, the proof of the pudding is in the tasting. The MoFi albums and One-Step LPs that I own sound spectacularly great. In fact, just two nights ago I played two One-Step titles (Yes' *Fragile* and Santana's *Abraxas*) for my brother, who was visiting me. Under the microscope of a reference-quality system (the $127k Basis Transcendence turntable, for example), these One-Steps could not be faulted. Even knowing about the A/D and D/A conversion in the signal path, I would not hesitate to buy MoFi titles in the future given the company's track record of making great-sounding LPs.

But what about the argument that you'd get better sound quality from a DSD file? There are several reasons why MoFi's LPs will sound better than a DSD file. First, very few reissue outfits go to extreme lengths to track down the real mastertape. The record company tape vaults are full of reels marked "Master," but there's only one genuine master, and that's the actual tape that was recorded during the mix. Such tapes are often identifiable by splices that you don't find on copies of the master. Tapes that are fifth (or more) generations, and that have been equalized, compressed, summed to mono in the bass, and otherwise manipulated for mass LP production, are also labeled as "Master." (These inferior tape copies are LP cutting masters, not the original masters.) One of the reasons MoFi LPs sound so good is that they expend considerable effort to find the true master so that the process begins with a pristine source.




Second, MoFi takes extreme care in the transfer, adjusting the playback machine's azimuth on a track-by-track basis, for example (see the feature article in Issue 328).

Third, there's an argument that an LP can sound better than the digital file from which it was created. How could that be? No less an authority than the legendary mastering engineer, pioneer of modern direct-to-disc re-

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cording, and Sheffield Lab co-founder Doug Sax told me personally that in his experience an LP cut from a digital file sounds better than the file. He didn't have a technical explanation, but his hunch was that with the LP the audio signal has been converted to mechanical motion at the cutting head, and this conversion "pre-digests" (his term) the signal so that the loudspeaker, which also converts an electrical signal to mechanical motion, has an easier job compared to a signal that had never undergone such an electrical-to-mechanical conversion. I don't know if this theory is correct, but his experience was that the LP sounded better than the digital file from which the LP was cut.

The final factor in whether the DSD file is superior to the LP is the quality of the D/A converter. Is your DSD DAC better than the one in MoFi's mastering studio? Probably not.

As with all things audio, quality is best judged by listening, not by adherence to any fundamentalist dogma. tas

## Statement by Mobile Fidelity

**WE AT MOBILE FIDELITY SOUND LAB** are aware of customer complaints regarding use of digital technology in our mastering chain. We apologize for using vague language, allowing false narratives to propagate, and for taking for granted the goodwill and trust our customers place in the Mobile Fidelity Sound Lab brand.

We recognize our conduct has resulted in both anger and confusion in the marketplace. Moving forward, we are adopting a policy of 100% transparency regarding the provenance of our audio products. We are immediately working on updating our websites, future printed materials, and packaging — as well as providing our sales and customer service representatives with these details. We will also provide clear, specific definitions when it comes to Mobile Fidelity Sound Lab marketing branding such as Original Master Recording (OMR) and UltraDisc One-Step (UD1S). We will backfill source information on previous releases so Mobile Fidelity Sound Lab customers can feel as confident in owning their products as we are in making them.

We thank you for your past support and hope you allow us to continue to provide you the best-sounding records possible—an aim we've achieved and continue to pursue with pride.

**Jim Davis**
**President, Mobile Fidelity Sound Lab**

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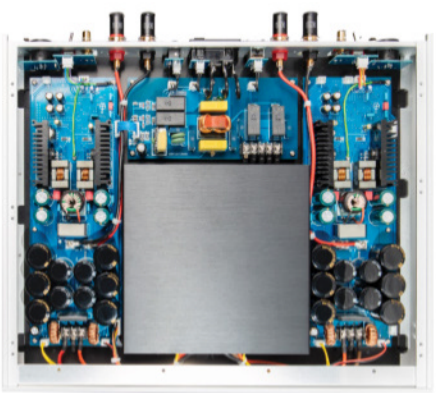

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# MoFi President Jim Davis on the Company's Mastering Process

Jonathan Valin and Robert Harley

**JV and RH: Why did you decide to master from DSD files rather than from analog mastertapes, as you used to do? What are the advantages of mastering from files vis-a-via mastering from tape, and what (if any) are the limitations?**

Jim Davis

**Jim Davis:** Some record label tape vaults changed policy regarding shipment of mastertapes. At that point our only option for those recordings was to *go* to the mastertapes. Once we were able to access these masters, the dilemma was how can we best retrieve the information from the master? We experimented with making analog copies from the master. Various tape stocks (½", 1") and speeds (15ips, 30ips) were tried but rejected. There was no way to overcome the noise-floor disadvantages of copying from one analog tape to another. When we tried DSD, it was immediately clear this was a vastly superior method for maximizing information retrieval. Developed as an archival format, DSD is sonically transparent, with a very low noise floor. Combined with the painstaking transfer process described below, the capture is a virtual snapshot of the master, revealing detail and nuance at a level that conventional methods could not. Counterintuitively, this capture yields, in our evaluation, superior sonics compared to a cut that is direct from the analog tape to the lathe.

The process of achieving these captures at a remote studio location is expensive and time consuming. We ship our proprietary gear, including our Tim de Paravicini-modified Studer A80 tape machine, to the studio, rent studio time, and fly and lodge our engineer for several weeks at a time. The process of making a DSD capture using our techniques takes a day or more alone for each tape. These are long and exhausting days, and I'm proud of the hard work MoFi engineers put into each project and of the results they consistently achieve. I'm not aware of any other audiophile record label that puts that time and expense into each release.

Beyond the additional time, effort, and expense, I'm not aware of any sonic limitations of using this process.

**Exactly when (what year and titles) did MFSL start mastering from DSD files?**

The first MFSL title mastered from a DSD file was Natalie Merchant *Tigerlily*, which was released in 2007. Over time, we mastered progressively more titles using the DSD archival capture step. Sourcing-information for all MoFi vinyl titles is being added to the MoFi website daily, and a complete discography will be posted on the site.

**Are any MoFi LPs still mastered from tape, or are they all mastered from DSD files?**

The last title we captured and cut from the mastertape without a DSD step was David Crosby *If I Could Only Remember My Name*. It was released in 2022 but was captured in early 2020. All other releases since early 2020 use a DSD step in the mastering unless the original recording is a digital source. Going forward all releases sourced from analog masters will utilize a DSD step.

**Could you clarify the precise process and signal chain for cutting a lacquer, from the analog mastertape to the cutting lathe?**

Starting with the original tape and using our custom Tim de Paravicini Studer A80, our engineers do a rundown of the recording, noting azimuth-alignment-settings for each splice and edit. Once there has been a thorough evaluation of the tape, the engineer captures the first song or up to the first edit. At each splice point he realigns the azimuth. This precision alignment is crucial to maximizing information retrieval from the tape. These tapes could have been recorded at different studios on different tape machines, and it is vital to mirror these machines by continually aligning azimuth. After the capture, the DSD file is evaluated in Sebastopol and returned to the analog domain. Using a Tim de Paravicini analog EQ, the engineer makes his equalization adjustments. EQ is not done in the digital domain. This signal is then fed into the lathe cutterhead, which is driven by Tim de Paravicini tube amplifiers.

In a conventional analog-to-lathe cut, the engineer needs to make all his adjustments, including azimuth alignment, on the fly. Azimuth alignment is a micro adjustment, and there is no way to nail it precisely while cutting on the fly. And this is a move that needs to be done at each splice, regardless of how short the duration.

**Why are some titles cut from DSD64 and others from DSD256?**

Any title cut from DSD64 was captured from 2011 to January 2014, using the Meitner A/D. When better technology became available, we upgraded to the Merging Technologies Horus A/D which captures in DSD256. We continually experiment with new processes, technologies, gear, materials, and vinyl formulas to obtain the best sonic results. If an advance in technology comes along, we plan to be the first to evaluate and adopt it if it provides a sonic benefit.

**Why does MoFi limit the number of copies it produces, particularly when you can cut as many lacquers as you want if you are cutting from a DSD file, and wear on the precious original mastertape isn't an issue?**

Like many things in the

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more-complicated-than-it-appears music business, limits on production runs can be based on numerous factors, such as licensing agreements, paper management (jackets, boxes, etc.), and even material shortages. As some may be aware, the only factory in the U.S. producing lacquer blanks burned down several years ago.

In the case of our One-Step releases, we based our limits on our estimates of demand. When we decided on a limit of 2500 copies for our first One-Step release, Santana *Abraxas*, we had no idea how many $100 records we could sell. Since that release we have consistently increased the limits of each release based on estimated demand. One principal misconception of the lacquer-cutting process is that with a DSD file we can just push play and cut a lacquer and be done. That is simply not the case. There are many additional steps between the DSD capture and before a record is complete. To cut the lacquer, the DSD signal is fed into an analog EQ. This analog domain equalization is done by our cutting engineer for each and every cut. Once the lacquer is plated and stampers made, test pressings need to be pressed, QC'd, and approved. This process is repeated for every set of lacquers. Since only one set of stampers can be made from each One-Step cut, you can see that producing ever larger quantities of these records requires a considerable amount of time and work. In addition to mastering costs, decisions need to be made on packaging well before the release date. At some point, given our large backlog of future One-Step releases, we need to move on the next title. Regarding limits on regular vinyl titles, we set them based on our estimates of demand. Many of these limits were set prior to the pandemic, which completely blew all demand estimates out of the water.

Regarding wear on tapes, we have an obligation to help preserve what are sacred documents of our musical history. These moments were captured on a now-fragile physical medium. Mastertapes are a finite resource. We are privileged to not only be stewards of these recordings for a short while but also to be a conduit during that time, to present them in what we feel is their best light.

**The revelation that MoFi cuts from digital masters has suggested to many that the advantages of a purely analog chain are imaginary. How do you reply to that line of thinking?**

That's a debate that has and may continue to go on for years. I can only speak for our process. We did extensive evaluations of all aspects of the mastering process and found that using our proprietary gear with these steps yields the best sonic results. In the end it's up to each individual listener to make his or her own decision as to what sounds best. We feel the excellent reviews from so many of our customers and the press support our point of view. For that we are grateful. tas

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# Magnepan LRS+

## Wow!

Jonathan Valin

**Those of you who have been reading me for the past** 30 years already know that I am a huge fan of Magnepan loudspeakers. Indeed, as I've noted in these pages many times before, it was the Maggie 1U/D that set me on the road to the absolute sound. Before I heard that first Magneplanar, I relied on published specs and magazine test results to narrow down the speakers and electronics I was interested in. After listening to it (in 1973) and being momentarily fooled into thinking I was hearing someone playing a real concert grand (there happened to be a piano in the room, hidden behind what I thought were decorative screens, which turned out to be Magnepan 1Us), I realized there was a better way to judge high-fidelity components—the HP way, the TAS way, the way that puts the closest approximation of the sound of the real thing first and specs last.

Not only did Maggie's founder, Jim Winey, invent an entirely new transducer that came closer to making acoustic instruments sound "there" than anything that preceded it; he also priced his flagship quite reasonably at $995 ($6550 in today's dollars). To this day, Magnepan's offerings are eminently affordable. Even its current highest-ticket item—the eight-foot wide, six-foot tall, four-panel MG30.7—comes in at $37,995, which isn't chicken feed, of course, but is still a far cry from a three-quarter-of-a-million-dollar Magico M9 or a half-a-million-dollar Wilson XVX or a $320k MBL 101 X-treme MKII (which are the company it keeps).

When I reviewed the MG30.7, I explained in detail what I liked and didn't like about Maggies. Rather than recasting what I wrote, allow me to quote from that review, starting with the plus side of the Maggie ledger.

"To begin with, Maggies have no box and, hence, no box coloration. Given the strides that have been made in dynamic drivers and their enclosures, you might think this wouldn't make as dramatic a difference as it did years ago. But that really isn't the case. Boxes, no matter how skillfully made, are still boxes, and to varying degrees they still add their own resonant colorations to the sound. (They also often add confusion to the sound, due in part to the turbulence of the backwaves that are rattling around inside them.) Typically, this results in a dark woody or bright metallic hue overlying the natural tonality of instruments, some elongation or truncation of the duration of the dynamic/harmonic envelope, a masking of fine detail, and an intermittent sense that the music can be traced back to the drivers—faults the Maggies simply don't suffer from.

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**Type:** Two-way, quasi-ribbon, dipole, floorstanding loudspeaker
**Frequency response**: 50Hz to 22kHz
**Sensitivity:** 83dB/2.83V/500Hz @1 meter
**Impedance:** 4 ohms
**Dimensions**: 13½" x 48" x 1¼"
**Shipping Weight**: 40 lbs./pair
**Price:** $995 (optional stands, $289)

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**Subwoofers:** JL Audio Gotham (pair)
**Linestage preamps:** Soulution 725, MBL 6010 D, Constellation Audio Altair II, Siltech SAGA System C1, Air Tight ATE-2001 Reference, Zanden 3100
**Phonostage preamps:** Soulution 755, Constellation Audio Perseus, DS Audio Grand Master
**Power amplifiers:** Soulution 711, MBL 9008 A, Aavik P-580, Constellation Audio Hercules II Stereo, Air Tight 3211, Air Tight ATM-2001, Zanden Audio Systems Model 9600, Siltech SAGA System V1/P1, Odyssey Audio Stratos, Voxativ Integrated 805
**Analog source:** Clearaudio Master Innovation, Acoustic Signature Invictus Jr./T-9000, Walker Audio Proscenium Black Diamond Mk V, TW Acustic Black Knight/TW Raven 10.5, AMG Viella 12
**Tape deck:** Metaxas & Sins Tourbillon T-RX, United Home Audio Ultima5 OPS
**Phono cartridges:** DS Audio Grandmaster, DS Audio Master1, DS Audio DS-003 Clearaudio Goldfinger Statement, Air Tight Opus 1, Ortofon MC Anna, Ortofon MC A90
Digital source: MSB Reference DAC, Soulution 760, Berkeley Alpha DAC 2
**Cable and interconnect:** CrystalConnect Art Series Da Vinci, Crystal Cable Ultimate Dream, Synergistic Research SRX, Ansuz Acoustics Diamond
**Power cords:** CrystalConnect Art Series Da Vinci, Crystal Cable Ultimate Dream, Synergistic Research SRX, Ansuz Acoustics Diamond
**Power conditioner:** AudioQuest Niagara 5000 (two), Synergistic Research Galileo UEF, Ansuz Acoustics DTC, Technical Brain
**Support systems:** Critical Mass Systems MAXXUM and QXK equipment racks and amp stands and CenterStage2M footers
**Room Treatments:** Stein Music H2 Harmonizer system, Synergistic Research UEF Acoustic Panels/Atmosphere XL4/UEF Acoustic Dot system, Synergistic Research ART system, Shakti Hallographs (6), Zanden Acoustic panels, A/V Room Services Metu acoustic panels and traps, ASC Tube Traps
**Accessories:** DS Audio ION-001, SteinMusic Pi Carbon Signature record mat, Symposium Isis and Ultra equipment platforms, Symposium Rollerblocks and Fat Padz, Walker Prologue Reference equipment and amp stands, Walker Valid Points and Resonance Control discs, Clearaudio Double Matrix Professional Sonic record cleaner, Synergistic Research RED Quantum fuses, HiFi-Tuning silver/gold fuses

"Now I'll grant that the sound of box speakers can often be very attractive—that the spring-like action of air trapped inside (or vented partly from within) their enclosures adds 'zip' to attacks, tonal density and dynamic weight to the upper bass and lower midrange, and slam to the midbass. Indeed, for those listeners who put beauty and excitement first, the added color and power of box speakers are indispensable. For listeners looking for an approximation of the sound of the real thing, however, these are colorations that one almost *never* hears in life, unless the orchestra itself is enclosed in a box (as a pit orchestra is) or its sound is being amplified by loudspeakers in a hall or an auditorium.

"Second, Maggies are dipole line-source rather than dynamic quasi-point-source loudspeakers. This means they generate their sound in free space forward and backward, rather than sending half toward you and half into a sealed enclosure or an enclosure with a hole in it. Because of their highly coherent, figure-eight wavelaunch, line sources like the Maggies tend to interact less destructively with listening rooms than quasi-point-source cone speakers do. They have little-to-no floor or ceiling bounce, zero output immediately to their sides, an out-of-phase backwave that is mostly dissipated by the room itself, close to uniform power response on- and off-axis, and zero cabinet diffraction. This doesn't mean that they are a snap to set up; they are anything but. It just means that once properly positioned, they don't add as much room sound to the presentation as typical dynamic speakers do. Combine this with their boxless openness, free-standing imaging, vast soundstage, phenomenal resolution of inner detail, lightning transient response, and neutral timbre, and Maggies seem *markedly* less 'there' as sources than almost any dynamic-speakers-in-a-box I've heard.

"Third, like electrostats Maggies use extremely lightweight membrane drivers that have a much larger radiating area than cone drivers do and that, unlike cone drivers, are uniformly driven over their entire surface, making for lower distortion and higher linearity in their passbands. Unlike cones, Maggies do not need extremely steep crossovers to keep breakup modes at bay (although, to be fair, Magnepan has in the past played various tricks to

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mask the differences in speed, distortion, and resolution among its planar-magnetic, quasi-ribbon, and true-ribbon drivers). Even though I have some quibbles about earlier iterations of large single-panel Maggies (for which see the next paragraph), at their best Magnepans are very nearly as fast on transients, as high in resolution, as low in coloration and distortion, and as truthful in timbre as the most discerning electrostats (and considerably deeper-reaching and more powerful and linear in the bottom and top octaves than many 'stats).

"Having said all this, let me admit that in my experience Maggies have also been among the most consistently frustrating loudspeakers I've heard and owned. When a component is nearly incomparable in certain respects, over time the areas in which it falls short (and all speakers fall short) start to weigh on you like Marley's chains. And until recently, the Maggies, particularly the large single-panel Maggies (the 3.7s and the 20.7s), brought burdens as well as blessings.

"First, there was the matter of driver-to-driver coherence. While Magnepan's true ribbon tweeter is a technological and sonic marvel, to my ear it never blended smoothly with Maggie's quasi-ribbon drivers. (This is precisely why I've always preferred Maggie's all-quasi-ribbon 1.7 series to the larger single-panel speakers in its line. Yes, you lost some of the extension, resolution, and sheer glamour of Maggie's true ribbon on the top end—and you lost some of the amazing soundstage size and low-end reach of the bigger 'Pans—but what you gained back in octave-to-octave smoothness was well worth the sacrifice.)

"Second, line-source Maggies do not have the laser-cut image focus of quasi-point-source cones; their images are quite a bit larger than those of box speakers, which is something that takes getting used to (or not). With big ensembles or big instruments like pianos or drumkits, this isn't a problem; in fact, it is quite realistic. But vocalists can sometimes seem slightly outsized—and flat in aspect.

"Which brings me to three: Maggies (or at least latter-day ones) don't have quite the same three-dimensional body as cone speakers. And that is because they don't have the power-range warmth and fullness (or box coloration, depending on your point of view) of cone speakers. To be fair, large single-panel Maggies have sometimes seemed a bit sucked-out in the power range (a byproduct, perhaps, of their dipole radiation pattern—and the bass-range phase-cancellation that can engender), and though quite extended and well defined in the bottom octaves they don't do slam the way big dynamic speakers do. On acoustic instruments that play down into the low bass, such as doublebasses, timps, piano, organ, contrabassoon, they are nigh incomparably realistic. On Fender bass, synth, rock drumkit, or any instrument that is as much about power and impact as it is about pitch, timbre, and duration, the thrill, though not gone, is not there the way it is with, oh, top-line Wilsons.

"Fourth, big Maggies are, well, big and not particularly attractive loudspeakers that do anything but disappear in a listening room. Though I've heard them perform quite well in smaller spaces, they tend to like larger ones and, regardless of the size of the listening space, they thrive on power. Though not difficult to drive, they are low in sensitivity and need lots of amplifier, though they don't necessarily need *crème de la crème* amplification."

**Where the LRS played it was mostly marvelous, only it didn't play everywhere and had a few coherence issues in spots where it did.**

Since I wrote these words in 2018, a couple of new entries in the Maggie lineup have shaken things up. The first is the MG30.7, which, its enormous size notwithstanding, solved a goodly number of the sonic problems of larger Maggies. The second is the speaker I'm about to review.

The $995 LRS+ (add another $289 for a pair of its optional and, IMO, essential steel stands) is a new and improved version of Maggie's LRS (Little Ribbon Speaker)—a four-foot-tall, one-foot-wide, one-inch-thick "baby" Magnepan, expressly designed to fit into smaller, condo-like spaces. Previously, the littlest Maggies, such as the MMGs, used a mix of quasi-ribbon tweeter and planar-magnetic mid/woof panels. The LRS did not. Both the tweeter and the mid/woof sections of its diaphragm were quasi-ribbon, which is to say they used featherweight 0.001"-thick strips of aluminum foil, rather than much heavier wires, to transmit the signal to the 0.0005"-thick Mylar substrate to which they were bonded.

The advantages of quasi-ribbon technology are manifold. In addition to conferring a sizable reduction in mass, which allows diaphragms to start and stop more quickly and lowers "drumhead" resonances, the aluminum-strip voice coils of quasi-ribbons run the entire length of the panel, top to bottom, and are closely spaced across the panel's breadth. As a result, the electrical signals they are fed, and thus the magnetic fields they generate, are distributed more fully and uniformly to the Mylar diaphragm beneath them, improving accuracy, resolution, bandwidth, and power handling.

The $750 all-quasi-ribbon LRS was a breakthrough—a genuine improvement in the fidelity of the smallest-footprint Magneplanar. What made it special is what makes all the best Magneplanars special: its midrange was uncannily realistic sounding. What made it less than fully rave worthy was, well, everything else. Its upper midrange was rough and brightish, its top treble was rolled off, and its low bass and power range were virtually non-existent. Of course, we're talking about a small two-way planar loudspeaker. For $750, it would be beyond greedy to expect it to run the gamut. Where the LRS played it was mostly marvelous, only it didn't play everywhere and had a few coherence issues in spots where it did.

Comes now a new version of the LRS, the LRS+, with a substantially higher price tag than the original ($538 higher if you include, as I think you must, its optional stands). Those greatly improved stands aside, the Plus doesn't look any different than the original LRS. Its dimensions and weight are nearly the same (the LRS+ is an inch narrower). It is still a small, two-way, quasi-ribbon dipole. It is still sold in left/right pairs. Its printed specs

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are identical. Why would any budget-minded LRS owner want to consider junking or re-purposing what he's already got to buy this new offering?

Well, it sounds better is why. And not just a little better. Indeed, Wendell Diller (who has done the design work on Magneplanars since Jim Winey retired) has successfully addressed the very issues that marred the original's resume. That roll-off in the treble? Not vanquished, but ameliorated. That roughness in the upper mids? Smoothed out like a dress shirt fresh from the ironing board. Reduction of that nosedive in the power range and midbass? Done as if by order (to inappropriately quote Fred C. Dobbs).

What has changed in the design of the speaker to yield these improvements? You got me.

Here's the problem with Magnepan. It is an Old School company and Wendell is an Old School guy. Despite incessant questions, he just won't reveal what he (I think mistakenly) regards as state secrets. Where other outfits—Magico, for instance—are more than happy to show and tell you *exactly* what they've done to improve their transducers, Maggie and Wendell are not. Frankly, in today's world this needs to change. Unless a new technology or device has a patent pending on it, there is no legitimate reason to play dumb. It only creates confusion, which isn't good for anyone's business.

Though I could make some guesses about what's different in the Plus, they'd only be guesses. Maybe the crossover point and crossover parts have been changed, though, of course, it would still be a first-order slope, which is all that Maggie has ever used. Maybe panel tensioning and framing have been improved, and the ratio of membrane-space devoted to the lows and highs has been slightly altered. Maybe the Mylar used for the diaphragm has been reformulated or further thinned down. Ditto for the aluminum-foil voice-coil strips. The truth is I just don't know.

The only change I'm sure of is the one to the height and mass of those optional stands, which are much sturdier and elevate the panels attached to them higher than Maggie's traditional, ground-level, bent-metal feet (still supplied with the Plus). But the main sonic differences between Plus and Non-Plussed can't be the result of their new shoes. Having had a good deal of experience with mass-loaded, after-market Magneplanar stands, I know their typical effects—and deeper bass and richer tone-color aren't two of them. Yes, support systems can improve focus and resolution by lowering vibratory blur, but (typically) they also lean down timbre, particularly in the power range and midbass, which is the exact opposite of what I'm hearing from the Plusses.

It's all rather frustrating for a reviewer and for a potential buyer. To market a speaker that looks almost exactly like the one you've already reviewed/bought but costs 66% more (with optional feet) and sounds a whole lot better without any explanation of what's making for the improvements isn't fair play. Unfortunately, that's how it is. So, with the understanding that I'm unable to tell you what produces them, let's talk about the sonic changes in the Plus.

Perhaps the first thing you will notice (I certainly did) is the difference in the low end. The LRS had none—or none below 90–100Hz or so. Which meant that what could you hear of lower-pitched instruments or instruments playing in their bottom octaves was almost completely "implied" by harmonics. The full power, color, and impact of things like double basses, bass drums, piano, organ, tuba, bass clarinet, bassoon, contrabassoon, trombone, cello, French horn, harp—virtually the entire underside of the orchestra—just weren't there. It was like listening to music performed by wraiths, like those ghosts and skeletons that cavort to the player-piano version of "Danse macabre" in Renoir's *Rules of the Game*.

**Perhaps the first thing you'll notice is the difference in the low end... when properly set up, the LRS+ offers a *considerably* more complete sonic picture than Maggie's original LRS.**

When properly set up (for which, see below), the LRS+ offers a *considerably* more complete sonic picture. No, it won't dip much lower than 60Hz (at least it won't with authority and linearity), but in the 60Hz–200Hz range, the lower part of the power range, it is a much more robust, linear, detailed, and lifelike critter than the original. It gives you back a good deal of the foundation that the LRS robbed you of. It gives you back much of the power of the orchestra (to re-coin a phrase).

Now, let me be clear about this. No Maggie, certainly not its smallest offering, is going to sound like a Stenheim Alumine Five SE or an Estelon X Diamond II in the power range and low bass. It just isn't going to deliver the color, dynamics, extension, body, and the ensuing chills and thrills of those great cones-in-a-box loudspeakers, particularly on electronically amplified (i.e., rock and blues) music. Oh, you'll get some lifelike impact from the Plusses, for sure—enough to surprise and delight you, particularly if you're used to listening to the original LRSes—and you'll get fuller color and definition (along with superb transient detail) in the midbass on acoustic instruments like plucked or bowed bass. You just won't get the whole gamut of that instrument below 60Hz or so, and you won't get any of the near-subterranean reach of synth or five-string electric bass on great LPs like *Brothers in Arms* or *Let's Rock* or *Sinematic*.

You could, of course, try subwoofing. But mating a Maggie, any Maggie, with a subwoofer is a very tricky proposition. Usually, in a Maggie-based system, the boxiness, floor bounce, and induced room resonances of a direct-radiating sub immediately call attention to it as a sound source, which is the exact opposite of what Magneplanars do on their own. In addition, no matter where and how steeply you cross them over, the "masking" effects that subs generate in the crossover region and above can rob Maggies (and dipoles in general) of enough transparency, tonal neutrality, and resolution to play havoc with the boxless purity of their unwoofed sound and invalidate the very reasons you bought them. On top of this, a sub adds complexity to an LRS+ system and eats up space.

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The second thing you'll notice (or maybe the first, depending on your listening taste) is the difference in the upper midrange and treble. What was rough and curtailed is now smoother, a bit more extended, and better blended with the rest of the spectrum. The difference is almost as profound as the difference on the bottom, and in some ways more important. After all, you can live with a speaker that has little-to-no bass and virtually no top treble—or what's an LS3/5A for? It's a lot harder to live with a speaker that is rough and irritating in the 1kHz-to-4kHz range, the area where the ear is most sensitive.

Now, I wouldn't say the original LRS was shrill. It's just that the complete absence of bass tends to turn a spotlight on nonlinearities in the upper mids and lower treble, making them stand out more than they would if they were counterbalanced by richer, more natural low-end/power-range timbre, body, and impact. As a result, there was a brightness and forwardness to the LRS' presentation that did not, as I just said, verge into outright unpleasantness (or did not do so often) but was, nonetheless, audible. This upper-midrange roughness was made even more apparent by the LRS' nosedive in the top treble, which (like the absence of bass) tended to isolate and spotlight the upper mids.

Robbed of a needed bit of treble extension and linearity, the LRS was altogether too lean and limited on top. The Plus is less so. As with its bottom octaves, the new LRS restores a measure of smoothness, sweetness, air, and life to the high end of the orchestra. You can hear this on virtually any recording of violin, viola, flute, clarinet, oboe, trumpet, English horn, harpsichord, or upper-octave piano. Add this newfound top and bottom smoothness and extension to what was already a fabulously lifelike midrange, and you get a loudspeaker that, on a great recording, can almost fool you into thinking you're listening to the real deal.

Take for example, Ornette Coleman's wonderfully idiosyncratic cover of the Gershwins' "Embraceable You" from *This Is Our Music* [Atlantic/Wax Time]. Through the best box speakers this is a very natural sounding track, but even the best box speakers don't do timbre the way Maggies do. It's like the difference between hearing music in a good hall and hearing the same music played out of doors. Through the Maggies, a layer of box, driver, room coloration is lifted. As a result, the unique plasticky timbre of Coleman's Grafton alto sax and the leaner, less robust color and power of Don Cherry's pocket trumpet are reproduced with a neutrality and fidelity that most cones-in-a-box speakers don't offer to quite the same degree. Through dynamic speakers, Coleman's alto sounds just a bit more like a standard metal instrument; Cherry's pocket trumpet a bit more like a full-sized one. Granted, this added richness and luster may be more appealing to many listeners (including me, sometimes), but the fact remains that it is less true to life.

The same is the case with vocalists. Of course, Maggies are famous for the naturalness with which they reproduce the human voice. (Some of the most lifelike reproduction of male and female singers I've experienced in better than 50 years of listening has been through various iterations of Magneplanars—Neil Diamond singing "Girl You'll Be A Woman Soon" via Maggie 1Ds; Lou Reed singing "Walk on the Wild Side" via MGIIs; Dolly Parton, Emmylou Harris, and Linda Ronstadt singing various cuts from *Trio* via MG3.5s; Son House singing "Death Letter" via MG30.7s; countless other vocalists through MG1.6s and MG1.7s.) Because of their diminutive size and smaller panels, the Plusses will not only reproduce singers with Magneplanars' characteristic in-the-room-with-you realism (try Ry Cooder and Taj Mahal on "Deep Sea Diver"—a bawdy tune that, as TAS' Jeff Wilson wryly observed, isn't likely to make it into the next Cousteau Society documentary); they will also do so with tighter image focus than taller, wider, larger-panel Maggies.

Before discussing the Plusses' downside, I need to say a word about setup. In the old days, Maggies were typically listened to head-on, without any toe-in, for greatest neutrality. A lot of folks still prefer this alignment, but…it won't work ideally with the LRS or the LRS+. Because of the smaller size of their quasi-ribbon panels and the fact they are two-ways, you may end up with either too much bass or too much treble and not enough in between—i.e., with too dark or too bright a tonal palette—if you don't cant the speakers in a fair amount (*at least* 15–20 degrees). Though this may be room-dependent, Maggie also recommends that the speakers be situated with their tweeters (visible via a flashlight shined through the grille as the section of the panel with narrower, more closely aligned foil strips) to the outside and away from the wall and, with the requisite toe-in, their woofers to the inside and closer to the wall. My description of the sound of the LRS+ reflects Maggie's set-up recommendations, albeit with toe-in painstakingly tweaked almost degree by degree until I achieved a balance that was neither too top-down or too bottom-up but audibly and measurably close to neutral.

Now for the downside. Let's face it: Any planar (any speaker) that costs under a grand is going to have its limitations. Though they are considerably less severe than those of the original LRS, the Plus still has a few. I've already mentioned its restricted low bass. Though this may be ameliorated slightly by situating the speakers closer to the backwall (and taking advantage of a bit of room gain), the Plus is never going to go down with satisfactory linearity into the 40Hz–50Hz octave (and 30Hz and 20Hz you can forget about). Its improvement is more or less confined to the midbass (and up), which is a big step forward over the original but still nothing like what you'll get (for 72 times the dough) from a Stenheim Alumine Five SE.

Again, its upper mids and lower treble are smoother and less roughed up than those of the LRS, but since the top treble is still a bit rolled, the Plusses can sound a little "exposed" on cymbal or flute or high-pitched violin, as if some of the air, lilt, and native harmonic sweetness and extension of the instruments have been squeezed down or out of the music. Nonetheless, this is still an area where the Plus is substantially improved over the LRS.

Like all Magneplanars, but more so, the LRS+ has dynamic constraints. The excursion limits of Maggie's panels

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are considerably greater than those of the best cone drivers. On top of which, the smaller panels of the Plus mean less air is being moved to begin with. Though I haven't been able to make them clip, even at very loud levels, these baby Maggies aren't going to maintain 100+dB average SPLs (or 105+dB peaks) without complaint. Also, with a sensitivity of about 83dB they are going to need plenty of power.

An additional limitation associated with the speaker's diminutive size is soundstage dimensions. This is not as much of a problem when it comes to depth and width, but it does show up early and often when it comes to image height. Sonically, this is a mix of good and bad. As I already said, on voices you don't get the typical Maggie "bigness," which will be a positive thing for many listeners. Singers are less outsized and better focused through the LRS+. On the other hand, so are certain naturally large instruments, such as pianos and drumkits. In a speaker of these dimensions, you can only expect that so many attributes of acoustic instruments will be reproduced with complete realism—and the sheer volume of a nine-foot concert grand isn't one of them.

Bottom line: The LRS+ is a big improvement over the original LRS. It adds enough color, power, detail, and extension in the midbass and smoothness and coherence in the upper mids and lower treble to make it far more of a true full-range con-

**Its limitations notwithstanding, this is a great little loudspeaker and a sure-fire nominee for one of TAS' 2022 Product of the Year Awards.**

tender than its predecessor. Though you can do better in the Maggie line for about three times the money (the MG1.7i), you're not going to get the same condo-friendly form factor from the 1.7, which is a foot and a half taller and a half foot wider than the Plus. In cone speakers, you can find much smaller boxes at this price point and, for a bit more money, some self-powered models, but not a one of them that I've heard comes as close to sounding like the real thing as this baby Maggie. For folks who are new to the high end or have small listening spaces or are working with limited budgets or just want a second high-fidelity system in a different spot for music or TV, I can think of no better choice for the dollar, particularly if you treasure the sound of acoustic instruments. Its limitations notwithstanding, this is a great little loudspeaker and a sure-fire nominee for one of TAS' 2022 Product of the Year Awards. tas

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# Vivid Kaya S12

## Out Of This World

Neil Gader

**What's a four-letter word for musicality? Answer:** K-a-y-a. Specifically, Kaya S12, Vivid Audio's smallest loudspeaker in its four-model Kaya range. At a mere 15 inches tall, this two-way, ported standmount was *supposed* to know its limitations. Yet, throughout the lengthy review period the Kaya constantly upended my expectations. From its radical outward façade to the sophistication of its engineering the S12 was never short on surprises.

The shape is pure Vivid—complex, organic, almost free-form, and just a little like something that fell to earth from a passing comet. The numerical designation of Kaya 12 correlates to its 12-liter internal volume. (The larger floorstanding models, the Kaya 25, 45, and 90, follow that same pattern.) The S12's seemingly playful shape is not arbitrary, however; it's designed to minimize diffraction. There are no parallel surfaces or edges, at least not in the sense of the crisp, sharp corners found on many box enclosures. Founder/designer Laurence Dickie pointed out that the cabinet or "shell" is fabricated of a RIMcast polyurethane resin similar to that in the KEF Blade. The material is well suited to smaller volumes and is very stiff. Cabinet tuning is just above 40Hz with a slow roll-off.

The two transducers combine the new with the familiar. On the new side is the 4", long-throw, C100L-alloy mid/bass driver, which uses Vivid's patented, exponentially tapered, tube-loaded reflex design, first introduced on its much larger sibling, the Giya G1. Refined through finite element analysis (FEA), the large dust cap raises the breakup frequency. Treble frequencies are handled by the D26 1" alloy dome tweeter, used throughout the entire Vivid range, which is also tapered-tube-loaded. The tweeter is housed within a shallow waveguide, which not only increases output a few extra dBs but also aids time alignment and matches the dispersion of the midrange at the 3kHz crossover point.

Around back, the speaker terminals are single wire only. The sturdy optional three-legged stands add to the whimsical illusion of a space invader. Standard finishes are piano black, pearl white, and oyster matte, but any PPG automotive color is available on a special-order basis.

Given the non-traditional shape of the cabinet, controlling internal resonances was a large challenge. Dickie and his team engineered a unique solution. The "omni-absorber" is described as an internal half-shell that is wrapped within, or "tracks," the external cabinet shell and is equipped with radial ribs that absorb resonances in all dimensions—top to bottom and laterally. To paraphrase Dickie, it "addresses not only vertical modes within the cabinet, but modes along all planes." And it does this without attenuating the output of the bass port.

Room placement was fairly standard for the Kaya S12. With imaging as pristine as this speaker is capable of, a healthy distance from sidewalls should be in order, to attenuate those nasty first reflections. Also, shorter distances to a backwall were helpful for bass reinforcement.

In sonic performance, Kaya S12 demonstrated the kind of outgoing, uncolored midrange and top-end poise that made it one of the biggest little crowd-pleasers to ever spend time in my listening room. Given its size and the driver complement, it was not surprising that its overall balance was a lighter, cooler one—a top-down sort of affair that had a midrange-forward character and a very clean, if slightly dry treble. Transients were fast, from violin *pizzicatos* to flat-picked guitar arpeggios, and had the glint of authenticity rather than steely edginess.

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## Specs & Pricing

**Type:** Two-way, bass-reflex loudspeaker
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**Impedance:** 8 ohm (5.3 ohm minimum)
**Crossover frequency:** 3kHz
**Loading:** Exponentially tapered tube enhanced bass reflex
**Recommended amplifier power:** 25Wpc–125Wpc
**Dimensions:** 9.3" x 15.75" x 10"
**Weight:** 13.25 lbs.
**Price:** $6900 ($7400 any PPG automotive color); $2000 stands

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Small monitors such as the S12 walk a tightrope in balancing voicing, dynamics, and output. But even when asked to do things outside of its bailiwick, like kettle drums or standup bass, the Kaya remained poised and transparent and rarely edged over the line in the treble or became ill-defined in the bass or overly compressed in dynamics. And though the expression of resonance and sustain from the soundboard of a concert grand or a standup bass was not up to full-range-speaker standards, it was near the top of the heap for a monitor of this specification.

Equally impressive was its go-for-broke high output—a critical component of the home-cinema experience. Obviously, playback levels that veered upward to near-rock-concert or *Top Gun* intensity resulted in some modest congestion and image blur, but the Kaya S12's limits were exceedingly high for this size monitor.

While true bottom-octave bass response was beyond its reach (sorry, pipe organ fans), I learned early on not to count out this game little speaker. There was much in the way of satisfying mid- and upper-bass response. It was of a nicely tapered quality, with good pitch and timbral detail. The low-frequency roll-off was gentle and didn't rely on ill-defined, one-note pulses or other bass-bump sleights-of-hand to suggest response where there really is none. To its credit port noise and general windage effects were practically non-existent. Though the full weight and majesty of a symphony was beyond its paygrade, the Kaya S12, nevertheless, communicated the gist of the source material with clarity and purpose. Even trombones, bassoons, and bass violins, though reduced in scale, were nicely defined in character, timbre, and texture. And the Kaya could still "bring it," so that the iconic opening vamp of vocal, drum, and bass guitar during The Beatles' "Come Together" was pitch-perfect and dynamic. Further, because of Kaya's smooth mid/upper-bass response, those who opt for deeper bass output via a subwoofer will find a very good companion in the Kaya S12. I would suspect that smaller fast subs from REL or GoldenEar would be a good match with the Kaya.

However, if a loudspeaker ever had a decisive sonic calling card, imaging would be it. Kaya 12 proved to be the very definition of the incredible disappearing compact. Inter-driver coherence was excellent, essentially seamless during critical transitions and with no evident treble beaming. The tweeter and mid/bass simply melded together in the same fashion that a fine coaxial driver does. With an almost cloudless purity, Kaya produced images that were unshakable in placement on the soundstage—an indication of precisely matched left/right pairs. An example would be the backing harmonies during Cat Steven's "Moonshadow." Placed in a full-bodied pocket of sound behind and to the left of Stevens, each voice was reproduced with a timbral complexity and eerie transparency that I've rarely heard on any loudspeaker system.

Imaging and soundstaging were so impressive on small-bore material that I threw caution to the wind and cued up one of classical music's big guns, Beethoven's Ninth Symphony [Reference Recordings; Pittsburgh Symphony, Honeck]. During the final movement the soloists were conveyed with a striking sense of vocal intimacy. Similar was the Kaya's ability to isolate the tiny gradations of timbre from members within the large, layered chorus. Its facility at imparting an expansive and three-dimensional soundstage equaled or surpassed any small monitor I've encountered to date.

This level of imaging precision also contributed to making Kaya S12 a richly engaging voice speaker, verging on human, you might say. It was particularly sensitive to female vocalists and tenors. (Conveying the weight of a chesty bass-baritone like Bryn Terfel was more of a challenge.) On Alison Krauss' performance of "He's Just a Country Boy" and Norah Jones' "Not Too Late," there was no denying the presence and immediacy that the Kaya was gathering from both tracks.

Vivid Audio's Kaya S12 flat-out caught me off guard—not an easy thing to do given the number of two-ways I've road tested over the years. Nonetheless, few compacts have managed to achieve the overall sense of midrange balance, tonal verisimilitude, and seat-of-the-pants musicality of the Kaya S12. Within its limits it offered an unfiltered, uncolored window on the music. Its whimsical appearance belies a serious engineering effort to extend the capabilities of the small loudspeaker segment. An impressive achievement and a joy to listen to. tas

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# Rogers LS3/5A Classic Special Edition

## The Legend Lives On!

Dick Olsher

**It is fair to say that H. D. (aka Dudley) Harwood was the** primary catalyst behind the development of the LS3/5A loudspeaker in the 1970s during his tenure at the British Broadcasting Corporation's (BBC) R&D Department. He retired shortly thereafter and went on to found Harbeth in 1977, but his work on controlling and damping cabinet resonances, and on means to improve what he referred to as image sharpness, were consequential in the development of the LS3/5A. In a nutshell, it was intended as a nearfield mini-monitor of "adequate sound quality and loudness" for use in small spaces such as mobile field control rooms, where larger existing designs would be unusable. It has been estimated that in today's prices, the Research Team's development costs exceeded one million British pounds. That's well beyond the resources of most loudspeaker companies.

Harwood believed that the main advantage of stereophonic over monophonic reproduction lay in its ability to distribute image outlines realistically in space, and that the greater the number of distinct sources that could be resolved, the better the system would be in this regard. Spatial performance was in his view dependent on how sharp the images are and how evenly they are distributed across the soundstage. He recognized that image sharpness or focus could only be determined by listening tests, as the perceived image is entirely a subjective phenomenon. Although not explicitly stated in the BBC's LS3/5A's white paper, I believe that subjective imaging excellence was an essential design objective. Factors that contributed to its imaging precision were a small, 5-liter, well-damped box and well-integrated drivers that created a virtual point-source radiator.

It's interesting to note that the BBC is still protective of its intellectual property after all these years. The designs and specifications for the classic LS3/5A, LS5/9, and LS5/8 are currently being licensed to suitable manufacturers. The intent is to control the quality and integrity of manufactured units. A five-year license is not a trivial investment and requires a signing fee along with a percentage of net revenues. For the record, Rogers is fully BBC-licensed. You should know that there are unlicensed copies in circulation, which means that, unless you purchase a licensed product, there's no assurance of compliance with the original specs. Rogers goes to great lengths to do this. For example, it isn't a trivial task to reproduce the original KEF B110 Bextrene mid/bass driver, which was introduced by KEF in 1966. The cone material was a type of rubberized polystyrene that, when coated with a doping compound called Plastiflex, achieved the required mechanical properties necessary to obtain smooth, low-coloration acoustic performance. Rogers uses a factory in Asia to manufacture the drive units, which are then QC'd and pair-matched in the UK. To duplicate the original Plastiflex doping on the 4.5" mid/bass, a damping layer is applied by hand and allowed to dry for 24 hours, before a second coat of a different damping material is applied. For the KEF T27 19mm tweeter, a mylar dome is used. The dome/coil assembly is

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## Specs & Pricing

**Frequency response:** 80Hz–20kHz (±3dB)
**Nominal impedance:** 15 ohms
**Drivers:** Bass/midrange, 110mm Bextrene cone; tweeter, 19mm Mylar dome
**Crossover frequency:** 3kHz
**Sensitivity:** 82.5dB/1W/1m
**Recommended amplifier range:** 30–80Wpc
**Dimensions:** 190 x 305 x 165mm
**Weight:** 4.9kg
**Price:** $4895; LS3 matching stands, $1995

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**Associated Equipment**
**Power amplifier:** Canor Audio AI 1.10, Futterman H3 OTL, Berning EA-230, JWN 807, and Will Vincent Dynaco ST-70
**Preamplifier:** AudioPrism Mantissa brought up to Red Rose Model 3a specs
**Phono front end:** Kuzma Reference turntable, Kuzma Stogi Reference 313 VTA tonearm, Clearaudio daVinci V2 MC Phono Cartridge; Wright Sound WPP200C phono stage; Sound Tradition MC-10 step-up transformer
**Digital front end:** Audirvana 3.5 software; Qobuz streaming; Denafrips Terminator DAC; Alldaq ADQ-USB 3.0 isolator
**Cable & interconnects:** Acrotec, Mogami & Kimber KCAG interconnects; Acrotec 6N; Kimber KCAG, ChromaLeaf Canare 4S11, Analysis Plus Oval 12, & Take Five Audio Cryo treated Mogami 3103 speaker cable
**Accessories:** Sound Application CF-X & TT-7 power line conditioners, Herbie's Audio Lab UltraSonic SS-9 and HAL-O III tube dampers

fitted and QC'd in the UK. Tweeters are then tested, measured, and pair-matched.

In hindsight, it is easy to acknowledge that this BBC-spec mini-monitor is, in fact, one of the most influential loudspeakers of all time, having inspired a host of imitations since its inception in the 1970s. In view of its cult status, I'm certain that most hardcore audiophiles have had a chance to audition a pair over the years. My close encounter with the LS3/5A materialized in the 1980s. And yes, back then I was not only enamored with its wide soundstage and exceptional image focus but also found its midrange transparency and clarity to do justice to reproduction of vocals. However, to be frank, its limited dynamics were cause enough for me to part company.

Fast forward a few decades, and we meet up with Andy Whittle, Rogers HiFi UK's head designer. He is a man with extensive experience in the loudspeaker business, having started in 1985 with Goodmans loudspeakers, which at that time had a license for making the BBC LS3/5A. While overseeing Rogers' UK production, he began experimenting with Panzerholz, a German high-tech resin-loaded wood product that is compressed to half of its original dimensions. It is much denser and more acoustically inert than ordinary wood. His goal was to improve the LS3/5A's jump factor. Toward that end, he replaced the thin front baffle with Panzerholz, which is now standard in the Special Edition, together with upgraded drivers and crossover resistors.

After auditioning this version, I'm convinced that it represents a major increase in performance. Nothing has been lost in terms of spatial conviction or image focus. But midrange transparency has increased, and, *über alles*, the sensation of compelling emotional tonality consistently draws me into the musical performance, along with enough detail and microdynamic resolution to satisfy even an old hand like me.

One of the factors that contributes to imaging excellence, namely a small wide-range mid/bass driver that is comfortable being crossed over at 3kHz, acts to constrain bass extension. For deep bass, you need a big woofer and a large matching cabinet. There is no way to cheat the laws of physics. However, midbass response was quite generous in my room, being a bit peaked at 80Hz, and flat to about 70Hz. Listening to the Bach Cello Suites, I didn't feel that tonal weight was compromised. The majesty of the cello shone right through. Of course, this is not the speaker for reproducing a 32Hz synthesizer note. It performed admirably on Baroque music, jazz, and vocals. On the other hand, it wasn't ideal for wide-range orchestral music; still, it was perfect for the sheer enjoyment of Mozart violin concertos.

Being a sealed-box design makes for a significant improvement in bass-line defi-

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nition over a bass-reflex box. The bass rolls off gently at 12dB per octave below 80Hz. While there wasn't much deep bass, the midbass was plenty satisfying. I had almost forgotten how much more natural sealed-box bass could sound relative to bass-reflex. One thing was certain, unlike so many stand-mounted mini-monitors that manage to sound anemic through the upper-bass range, the Rogers was able to generate sufficient tonal weight to do justice to piano timbre.

This is a true 15-ohm nominal load with a benign 12-ohm impedance minimum. Not only is this an easy load for a tube amp, but the impedance magnitude is fairly flat from 1.5kHz to 20kHz, thereby minimizing tube-amp load interactions and ensuring tonal accuracy through the upper mids and treble range. I cycled through a few of the tube amps in my collection, including the Berning EA-230, JWN 807, and Will Vincent Dynaco ST-70, and discovered that the Rogers is exceptionally revealing of an amplifier's intrinsic sonic character. In view of its modest sensitivity, it really requires a minimum of 30Wpc to fully energize its dynamic range. It is also a match made in heaven for any Futterman-style OTL. In particular, my refurbished Futterman H3 OTL purred like a fat cat on a hot tin roof. This coupling with its honey-sweet midrange textures exemplified soothing and luxurious sound at its best.

The tonal balance changed with the Tygan grilles off, being more forward. This was confirmed by measurements which showed increased output in the presence and lower-treble regions (between 4kHz and 9kHz). With the grilles on, the balance was more mellow and perceptually sweeter sounding through the midband. In either case, the frequency response exhibited that notorious midband peak (+3 dB) at about 1.2kHz that has been observed in the past and ascribed to a breakup mode of the Bextrene cone. With the grilles on, I could not detect the peak as a coloration, but with them off it was audible as a slight case of nasality. The moral of the story is to be sure and leave the grilles on. And in case you're wondering, the matching Panzerholz stands did improve performance and are a recommended coupling.

This LS3/5A Classic Special Edition has cast a spell over me. It has simply made it difficult to stop listening to the music, and that is a high compliment, indeed. Very few speakers, regardless of cost, have been able to do that over the years. It's remarkable that this denizen of the 1970s is still relevant today. Much like the QUAD-57 ESL, it has achieved classic status, and not because of its performance at the frequency extremes. Andy Whittle tells me that this is the best LS3/5A that Rogers has ever built. In my estimation, it may well be the finest LS3/5A available today. The legend lives on! tas

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# Raidho TD2.2

## Danish Delight

Kirk Midtskog

**I first encountered a Raidho speaker at CES 2012. The** company's C1 mini-monitor really made a positive impression, and so have other Raidho speakers since then. The C1 went through a few significant revisions and eventually led to a more sophisticated (and expensive) monitor with a similar size and appearance—the TD1.2, which I had the privilege of reviewing in 2020. I pretty much gushed over the TD1.2, particularly its lively dynamics, revealing transparency, and expansive soundstaging. While I loved the TD1.2 for its outsized performance, I kept wondering what the next model up—a 2.5-way floorstander with just one additional 6.5" mid/woofer—would sound like. "It would be nice to add a bit more bass to the TD1.2's swinging, beguiling, revealing presentation," I thought.

I got my wish. After some schedule coordination delays (and TAS' editorial approval, of course), Raidho sent me a pair of that next model up—the $46,500 TD2.2. OK, so I thought the 2.2 would expand the dynamic envelope a fair bit and create a marginally larger soundscape along with adding some of the bass I was hoping for. I was wrong. The TD2.2 sounds like a much, much larger speaker, one with powerful bass, open dynamics, and a taller soundstage than I anticipated. The medium/small, rear-ported, 2.5-way TD2.2 floorstander creates a sense of musical grandeur on a par with the Aerial 7T (a 96-pound, 45"-tall, three-way, four-driver floorstander, with two 7.1" bass units). It is also close in sonic scale to my reference YG Sonja 2.2*i* (a 271-pound, 51"-tall, four-driver three-way). Keep in mind, the TD2.2's cabinet itself is only 40" tall; its attached base adds 3.5". Just one more 6.5" cone, a larger cabinet, and greater mass than the TD1.2 stand-mounted I loved so much? That's it? I was truly not prepared for the larger sonic impact the TD2.2 delivered, but pleasantly surprised, I must say.

Raidho speakers are known for their smooth, grain-free, revealing top end and upper midrange. The TD2.2 exemplifies this well. The company's entire TD range uses Raidho's ribbon tweeter (a planar-magnetic design), one of the smoothest and most revealing upper-frequency drivers I have heard. Both the DT1.2 and 2.2 have a knack of laying a recording's upper frequencies bare but without the grit and glare one hears from too many other transducers. You hear the fine delineation of singers' lip sounds or of a rosined bow on a closely miked violin, for instance, but without the sense of exaggeration or dose of irritating distortion that come from some other tweeters—often metal-domed ones—that do not sufficiently mitigate their characteristic "ringing." The Raidho's kind of "detail" is closer to that of live music; one hears a lot of musical information but without an overlay of harshness and graininess.

The midrange is clear and well integrated with the upper frequencies, not easily accomplished with two different drivers of different materials and types—ribbon tweeter and cone mid/woofer. The TD in the name stands for "tantalum diamond." Raidho layers five thin coats of tantalum and industrial diamond on an aluminum cone to create a very stiff and well-damped driver membrane. Along with a powerful, under-hung neodymium-magnet motor system, a titanium voice coil, and a rigid, but open and well-ventilated frame (to mitigate back waves from impinging on the cone and to allow greater cooling ventilation), among other design features, the Raidho mid/woofer is a very accurate and responsive driver that can "keep up" with the ultra-fast Raidho ribbon tweeter. I believe Raidho has done the hard work of matching and integrating its tweeter with the 6.5" cone driver pretty darn well.

The additional 6.5" mid/woofer situated directly below the other mid/woof handles the bass and midbass. It is the same driver model with the

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## Specs & Pricing

**Driver complement:** 1x Raidho TD ribbon tweeter, 2x 6.5" Raidho tantalum/diamond mid/woofers
**Frequency response:** 32Hz–50kHz (–3dB)
**Sensitivity:** 88dB (2.83V/1 meter )
**Impedance:** 6-ohm nominal
**Recommended amplifier power:** 50–150W
**Crossover points:** 400Hz and 2.4kHz, stepped slope
**Cabinet:** Aluminum front baffle, CNC-machined MDF
**Dimensions:** 12.6" x 45.8" x 20.5"
**Weight:** 100 lbs.
**Price:** $46,500 in black, $51,000 in walnut (other colors available upon request)

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**Associated Equipment**
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**Phonostage:** Simaudio Moon 610LP
**Digital Sources:** Hegel Mohican CDP, HP Envy 15t running JRiver MC-20, Hegel HD30 DAC
**Linestages:** Ayre K-1xe, Hegel P30
**Integrated amplifier:** Hegel H390
**Power amplifiers:** Gamut M250i, Hegel H30
**Speakers:** YG Acoustics Sonja 2.2i, Dynaudio Confidence C1 Signature
**Cables:** Shunyata Sigma V2 signal cables, Shunyata Sigma USB, Shunyata Alpha S/PDIF and AES/EBU, Shunyata Sigma NR and Omega XC power cords
**A/C Power:** Two 20-amp dedicated lines, Shunyata SR-Z1 receptacles, Shunyata Everest 8000 and Typhon power conditioners
**Accessories:** PrimeAcoustic Z-foam panels and DIY panels, Stillpoints Ultra SS

same TD cone and neodymium magnet technology, but it only handles frequencies below 400Hz rather than the midrange as well as bass frequencies, like the upper mid/woofer unit does. This is where the .5 in the 2.5-way crossover design comes in. While there is a lot of overlap between the two mid/woofers' respective frequency ranges, the lower-situated mid/woofer adds extra bass weight and extension because it does not have to play in the midrange, like its neighbor does. And, boy, as mentioned, does it ever add bass. I have reviewed two other 2.5-way speakers—the Dynaudio Excite 32 and Dynaudio Focus 260 (both of which had ample bass response, a Dynaudio strong suit)—and

**The Raidho TD2.2 is, by far, the most commanding, extended, and musically solid 2.5-way speaker I have encountered.**

have heard many other 2.5-way designs over the years. The Raidho TD2.2 is, by far, the most commanding, extended, and musically solid 2.5-way speaker I have encountered.

Each driver is mounted on its own substantial aluminum baffle, which is joined to the solidly constructed, curved sidewall, slightly back-tilting, and heavily braced MDF cabinet. The integral base of finely finished aluminum, with adjustable, rounded (not spiked) feet, broadens the footprint of the speaker and lends an air of sophistication to its appearance. The base has some intentional compliance in the way it "suspends" or decouples the cabinet from the floor. Somewhat like the TD1.2's dedicated stand (which I did not care for, by the way), the TD2.2's base has more "give" when the cabinet is nudged a bit than any other speaker of its size and form that I know of. I don't know what sonic effect this cabinet base has on the speaker's overall performance. The base is bolted to the cabinet and is not interchangeable, unlike that of the TD1.2 mini-monitor, which I was able to switch over to a very stable, rigid, heavy speaker stand, achieving much better sonics as a result. That stand had even more give to it.

While robust, the bass extension doesn't plumb the lower-most octave. Raidho specs its low-frequency, –3dB rolloff point as 32Hz, and this is in line with my experience with the speaker. The TD2.2 played a 30Hz test tone (with gusto) in my setup—plenty low for most music. (Keep in mind, my listening room does not bleed off bass energy as many rooms do.) My reference YG Acoustics Sonja 2.2*i* plays lower notes with greater pitch definition and articulation, but given the TD2.2's driver complement and cabinet size (and substantially lower price tag), the DT2.2's bass weight and solidity will probably meet a lot of listeners' standards for a properly supported foundation in the low end. Hard-driving rock, most romantic-era orchestral music, pop, jazz, etc. are given their due. Only the lowest notes in concert organ music and electronica would require the addition of a subwoofer in most listening rooms.

On some recordings, I had the feeling the bass weight and presence, while laudable on one hand, overlapped the lower midrange a bit too much. Even when I account for my system's ability to produce good bass in my room, the TD2.2 seemed to follow Raidho's characteristic sound (at least as far as can tell from hearing some of their other floorstanding models), which can be fairly designated as "bottom up," as TAS' Executive Editor Jonathan Valin would call it. Meaning it has a tonal balance that tilts toward the bass rather than toward the midrange or treble. This tonal balance will work really well in many rooms and with many listeners' preferences. I am familiar with other listening rooms that are not much

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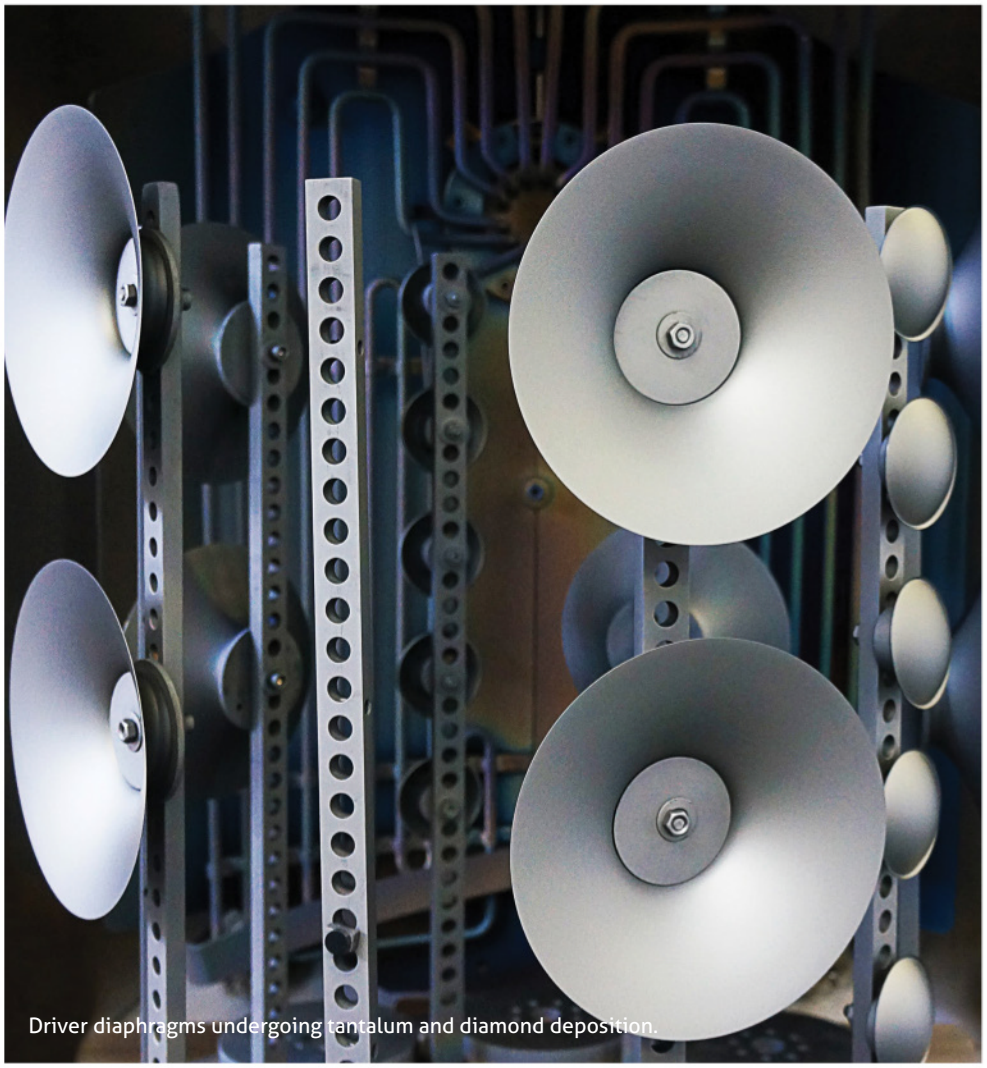

Driver diaphragms undergoing tantalum and diamond deposition.

larger than mine (12.5' x 17'), and they all need a hefty dose of low-end output to produce bass without room-induced bumps and dips. So, the TD2.2's bottom-up tonal character might just be the ticket for many listeners.

As mentioned, the real strength of the TD2.2 is its pristine, transparent, articulate, non-fatiguing upper frequency and midrange performance. The speaker just sparkles with marvelously detailed and tonally rich musical information. To my surprise on some recordings, the TD2.2 tracked tricky upper-frequency content, such as cymbal crashes and the upper range of female vocalists, with more agility and silkiness than my reference YG Sonja 2.2*i* did. Mind you, the Sonja 2.2*i* has greater dynamic power on hard transients across the board, including in the upper frequencies and midrange (as well it should at its $88,300 price tag), but the TD2.2 is truly impressive in the higher frequencies and upper midrange. The Raidho mid/woofer and its integration with the ribbon make for fabulous soundstaging and imaging. The outer edges of the stage were projected well beyond the edges of the cabinets, both on its side and top panels, and the back of the stage was very deep. Images floated in space with solidity and specificity, all of which made for long, enjoyable listening sessions.

Much like the stand-mounted TD1.2, the TD2.2 also allowed some musical elements to project into the listening room. Since this phenomenon is so similar between the two models, please allow me to quote from that TD1.2 review: "Rather than portraying the soundscape as a large imaginary terrarium whose front is near the plane of the speakers—starting near the back of the cabinets and then continuing rearward from there—the TD1.2 also projects out into the listening area in a way that includes a good deal of the space between the speakers and the listener. In a recording where the brass section plays loudly, for example, or a singer really sings to the balcony, that projected sound extends into the listening room in an approximation of what happens in live music. The effect allows for a greater sense of immediacy and listener involvement than a more 'contained-box' soundstage does." I also included the following clarification: "I don't associate this soundstage projection with 'forwardness.' For one thing, it only happens when the recording has an element that projects to the front as it would in real life. It is not a consistent characteristic across most recordings. And second, the TD1.2 is not at all hyped up or overly 'hot' sounding, as is often the case with forward-sounding speakers. On the contrary, the TD1.2 is remarkably revealing without sounding forced or aggressive. Its grain-free, detailed-without-brightness quality is one of its endearing attributes, actually." If memory serves me, the larger TD2.2 does this "breathe into the room" effect even better than the TD1.2 did.

The TD2.2 is a very musically involving speaker. From its crystal-clear fatigue-free treble and midrange down to its fabulously robust bass, the TD2.2 has a wonderful combination of detail retrieval, tonal richness, and solid musical foundation. Music shines vividly and evocatively through the Raidhos and invites you to listen and listen some more. Recommended. tas

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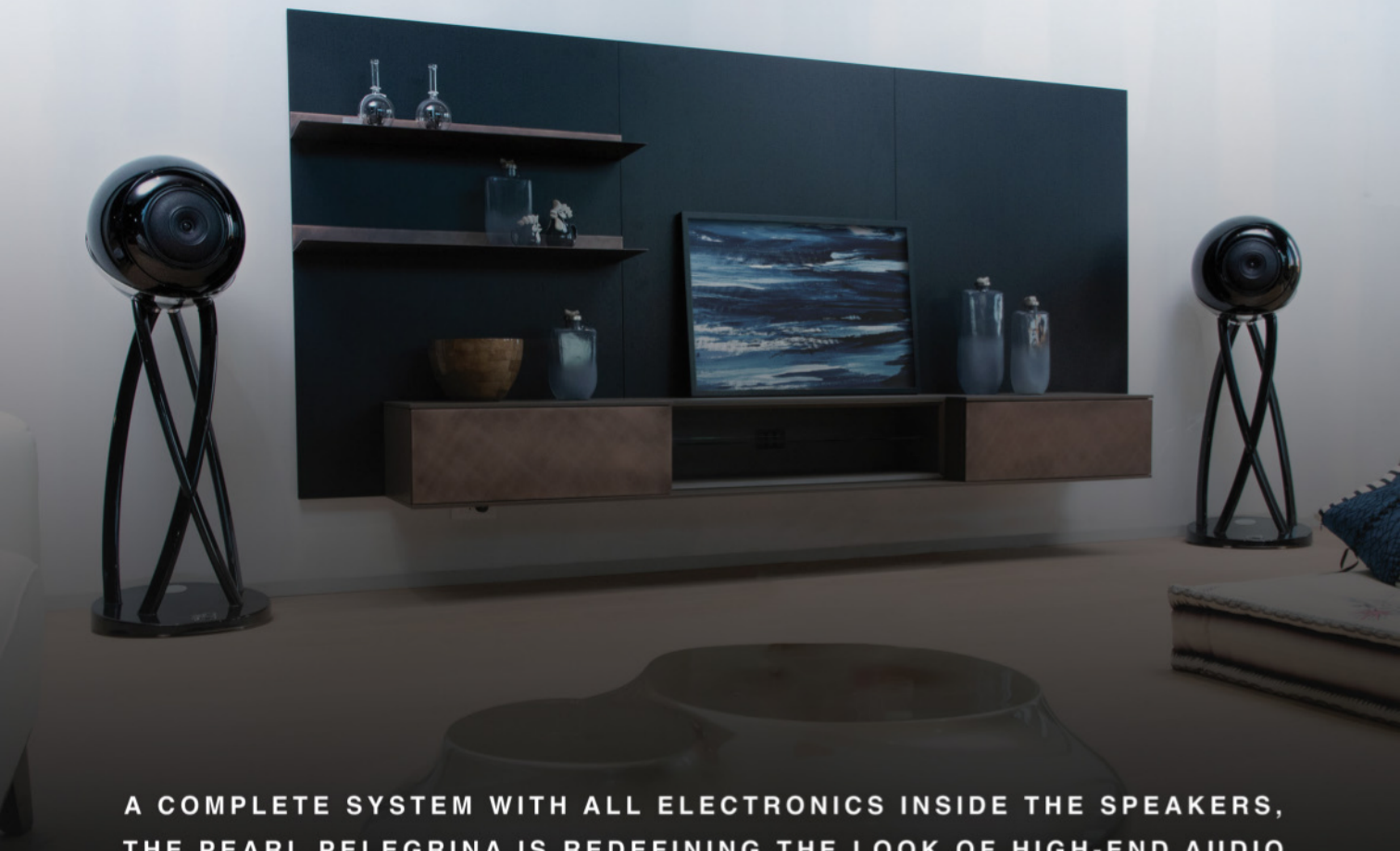

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# Wilson Audio LōKē Subwoofer

## 3-D

Jacob Heilbrunn

**My love affair with subwoofers dates to the days** when I owned Magnepan loudspeakers and was perpetually searching for that elusive bottom octave. As exciting as the Maggies were, the excursion limitations of their bass panel dictated that they simply could not deliver the very deepest bass octaves. But mating a subwoofer to a panel speaker, as I was hardly the first to discover, was a daunting proposition. Truth be told, it's not that simple to mate a subwoofer to *any* loudspeaker, but when you pull it off successfully, then the payoff is big.

What are the advantages of a subwoofer? There is the simple pleasure of hearing the very deepest musical regions reproduced, whether from organ, bass drum, or bass guitar. The growl, the richness, and the sledgehammer hit that a sub can convey in spades are all deeply satisfying to experience. But there are a host of other, perhaps less obvious benefits, that are worth quickly enumerating, starting with the fact that a subwoofer can play an indispensable role in recreating the venue in which a recording was made. A subwoofer can also smooth out the treble by providing a more solid musical foundation. Then there is the fact that a well-tuned subwoofer can also enhance subtle details in a recording. For all these reasons and more, I've pretty much continuously employed a subwoofer over the past decade or so. Make that two subwoofers because running them in stereo is really the optimal approach.

Now, with the introduction of Wilson Audio's LōKē subwoofer, I've upped the ante and moved to a total of four. One of the audio gremlins that's been lurking in the back of my mind for awhile has been to experiment with installing a second set of subwoofers to try and smooth out the bass response even further. LōKē seemed to offer the perfect opportunity not only to test out Wilson's latest offering, but also to see if I could extract just a little more from my own system, which is centered around Wilson's flagship WAMM Master Chronosonic system. Plus, I figured that any subwoofer named after the mighty Thor's evil brother must bring something devilishly unique to the audio table. And that Wilson's compact but potent LōKē certainly does.

Unlike the large Wilson WAMM Master Chronosonic subwoofer, which requires an external active crossover and amplifier, the 110-pound LōKē is a powered subwoofer with a built-in 500-watt amplifier. It has a front-facing 10" driver and port. A rear panel contains a passel of electronic controls for the subwoofer, including adjustments for slope, phase, and volume, as well as balanced and unbalanced inputs. Maneuvering the subwoofer into place is easy as it arrives with casters installed on the bottom of the enclosure. Corner installation is usually going to be optimal, and that's where I positioned it in the rear of the room. Why the rear? My main object was to determine what would occur when another set of subs was added to supplement the main ones in the front of my fairly large room. No, this wasn't looney tunes, as it were. Instead, the addition of the twin LōKēs turned out to make eminently good sense. Good things can come in small packages.

To help install the subs optimally, Peter McGrath of Wilson visited me. He was equipped with both measuring equipment and a variety of his own recordings. We conducted several measurements to determine the best positioning, phase, and volume output—a process that takes several hours. As we were simply trying to augment the lowest frequencies, there was no question that we were going to employ the low-pass filter. Somewhat to my surprise, however, it turned out that the 12dB slope was more efficacious in my room than the more severe 24dB slope. There simply wasn't enough oomph when we tried the 24dB slope. I ran the subs directly from the outputs of the darTZeel NHB-18NS preamplifier for the purest connection, rather than from the Wilson ActivXO crossover. The solid-state darTZeel experienced no impedance issues running three sets of outputs simultaneously—main amps, ActivXO crossover, and LōKē subs.

With the subs dialed in, I went right to the big stuff. First up on the list was Prince Royce's song "Senorita Por Favor" on his *Alter Ego* al-

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bum. McGrath almost lost it as he listened to the salacious lyrics, but he was most impressed by the sheer wallop of the bass line. It was as though the soundstage had been further expanded with even less sense of instruments colliding with one another. My impression was that it came one step closer to a 3-D sound. Something similar occurred on the Arturo Sandoval album *Ultimate Duets*. On the ebullient tune "Don't You Worry 'Bout a Thing," Sandoval's trumpet comes soaring over congas, entering the stratosphere. The additional support in the bass region helps create a more majestic sonic tapestry against which vocals and trumpet could shine. With the LōKē *in situ*, I could honestly say *I* wasn't worrying about a thing.

Then there was the Deutsche Grammophon LP of Carlo Maria Giulini conducting the Chicago Symphony Orchestra playing Mussorgsky's *Pictures at an Exhibition*. I was almost literally blown away by the impact of Chicago's fabled brass section in what the late Harry Pearson liked to call the power region. I've never heard what you might call the bottom third of the musical spectrum reproduced with that kind of palpability and presence. The tuba and trombones were awe-inspiring, not to mention the ability of the entire brass section to play in what seemed like perfect synchronicity to produce an effect larger than the sum of its parts. Once again, the ability of the LōKē to help support the bass had a salutary effect. In the "Catacombs" section, for example, Adolph Herseth's trumpet solo develops with even greater clarity and poignancy. For anyone who cherishes the "Chicago sound," this setup provided more than a glimpse of its storied heyday.

To get an even better grasp on the LōKē, I also ran it without the main subs. I can't say that it could replace or even vie with the WAMM subwoofers. But it did more than hold its own. Two things impressed me. The first was the speed of the sub. There was no bloat or smear. On one of the trickiest things to reproduce—acoustic bass on jazz recordings—the LōKē firmly resolved the notes and displayed excellent pitch accuracy. The second thing was the sheer amount of air that the LōKē could move. Don't be fooled by its diminutive size. The LōKē can bring it on. There's nothing low key about it.

The LōKē has become a valued part of my audio arsenal. Put bluntly, I'm smitten. The most important attribute that it has for my system is to create an enveloping sense of music in my listening room. It suffuses it with music. When I listen without the LōKē, the system simply sounds more two-dimensional. It lacks that sense of oozing sound emanating throughout the room. There are times when I'll listen to my speakers with no subs at all. (I like to listen to different setups.) But for the ultimate listening pleasure, there's no substitute for a quad of subs. This is a more than worthy successor to the older Wilson WATCH Dog subwoofer, which was no slouch itself. Daryl Wilson, who has succeeded to the helm of Wilson, deserves a lot of credit for successfully steering the company into a new era. If you have a big system and are hankering for more, then the LōKē may well offer it. The old audio rule holds: There is no replacement for displacement. tas

## Specs & Pricing

**Driver:** 10" woofer
**Integral amplifier power:** 500 watts
**Frequency response:** 20Hz to 250Hz (±1dB)
**Effective piston area:** 21.75"$^2$
**Effective displacement:** 33.42"$^3$
**Dimensions:** 13-7/8" x 20¾" x 21"
**Weight:** 110 lbs. each
**Price:** $8750 each

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# YG Acoustics Vantage Live

## Trailblazer

Robert Harley

**Integrated audio systems—products that combine** speakers, amplification, and streaming functions—tend to be aimed at the consumer who values convenience, ease of use, and fewer boxes over ultimate sound quality. There have been a few excellent upscale offerings in the category—the Image 1 from Gayle Sanders' Ikon Audio and the Meridian Digital Loudspeakers, for examples—but by and large the category is dominated by mid-priced efforts. Despite the inherent technical, sonic, and cost-saving advantages of integrated systems, these all-in-one packages largely haven't caught on with audiophiles. Indeed, the hard-core enthusiast revels in building a piece-by-piece component system perfectly tailored to his room, tastes, and budget, finding just the right amplifier, or reveling at the upgrade rendered by a new DAC. Frankly, the thrill of the chase is an important part of the allure of high-end audio.

But what about the well-heeled music lover who just wants to enjoy listening without all the fuss? For many people, component audio is intimidating to buy, unwieldy in the home, and difficult to use daily. What does the high-end industry offer this music lover? How can we bring the uncompromising ethos of performance audio to a much larger group of people, who love music and have the means to acquire a quality system? How do we save those consumers from mass-market dreck and change their lives through a deeper relationship with music?

YG Acoustics has addressed this dilemma with the new Vantage Live system reviewed here. The $59,800 system is a pair of YG's Vantage loudspeakers with integral amplification, DACs, and streaming. Just plug the pair of speakers and a small control box into wall power, run a pair of thin ST-Type optical cables, connect to a network, and you can begin streaming from your phone or tablet (streaming subscription required) with the excellent Roon interface. The system couldn't be easier to set up and use, and room placement turned out to be surprisingly unfussy.

But is the Vantage Live "high end?" Does it embody the highest aspirations and values that are the foundation of the field? Or are there inevitable compromises inherent in combining so many functions in a single product? Those are the questions we'll explore in this review.

The Vantage Live is the result of a partnership between loudspeaker maker YG Acoustics, electronics and DAC manufacturer Bel Canto, and the British design firm Cambridge Acoustic Sciences. Most of you are familiar

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## Specs & Pricing

**Vantage Live Loudspeakers**

**Type:** Tri-amped powered loudspeaker with integral streaming and digital-to-analog conversion
**Driver complement:** BilletCore 8.75" woofer, BilletCore 7.25" mid-woofer, ForgeCore dome tweeter
**Loading:** Sealed
**Crossover:** DSP
**Frequency response:** 25Hz–30kHz
**Phase deviation:** ±2° over audio bandwidth
**Integral amplification:** 3x 700W per speaker; 0.001THD+N from 20Hz–20kHz at half peak power; 135dB signal-to-noise ratio unweighted referenced to peak power; 93% efficiency at peak power; 1.5m ohm output impedance
**DACs:** Three per loudspeaker, 126dB dynamic range
**Finishes:** Anodized ChromALure, high-gloss paint, custom finishes available
**Dimensions**: 13" x 44" x 54"
**Weight:** 176 lbs. each, net

**Vantage Live Controller**

**Digital inputs:** USB, TosLink, SPDIF (BNC), AES/EBU
**Digital formats supported:** Up to 192kHz/24-bit on AES/EBU, SPDIF, and TosLink; up to DSD128 and PCM 192kHz/24-bit on USB (DoP); MQA decoding, Roon Endpoint
**Network:** Ethernet, Wi-Fi (dongle included)
**Analog inputs:** Two line, one phono
**Phono input sensitivity:** 2.5mV to 5mV (mm); 0.25mV to 0.5mV (mc)
**Phono loading:** 47k ohms (mm); 50, 100, 500, 1k ohms (mc)
**RIAA accuracy:** ±0.25dB 50Hz–15kHz
**Phono signal-to-noise ratio:** >70dB A-weighted
**Digital outputs:** Left/right-channel digital outputs on ST-Type optical jacks
**Analog outputs:** One line level (to drive powered subwoofer)
**Processing:** Selectable second-order high-pass filter for main output used with a subwoofer; subwoofer gain; bass tilt adjustment
**Remote:** Metal hand-held
**System control:** SEEK music-management app; Roon (requires Roon subscription)
**Integration:** RS232
**Dimensions:** 15.7" x 3.7" x 12.4"
**Weight:** 19.2 lbs.
**System price:** $59,800

with YG and Bel Canto, but Cambridge Acoustic Sciences (CAS) is likely a new name. The firm was founded by a group of Ph.D.s, including a person with a doctorate in musicology. CAS had taken advantage of its cutting-edge expertise in computational modeling in a variety of fields and applied it to acoustic design and loudspeaker engineering. Specifically, CAS has developed the ability to mathematically model a loudspeaker's performance, create separate mathematical models of a wide range of listening rooms and furniture layouts, and then "place" the loudspeaker model in one of more than 300 room models, with the resulting data guiding the development effort. These models are so computationally intensive that they can be realized only through cloud computing. The company's co-founder, Dr. Matthew Webster, wrote his doctoral dissertation in astrophysics on modeling the large-scale structure of the universe. He is also a longtime owner of a pair of YG loudspeakers and a serious music lover. During a visit to the YG factory late last year I spent an hour on a Zoom call with Dr. Webster in which he talked about CAS' unique approach to loudspeaker design and to the Vantage Live, in particular. In addition to developing the acoustic design, CAS programmed the DSP crossover and provided the overall system integration of the Vantage Live. Incidentally, CAS also contributed all the design and engineering of YG Acoustics' new Peaks series, a line of passive loudspeakers that range in price from $8500 to $25,000 per pair.

The Vantage Live is rather short and stout, with an upper module housing the 7.25" mid/woofer and 1" dome tweeter, and the lower flared module containing the single 8.75" woofer. The woofer enclosure is sealed, as it is with all YG designs. The system is only 44" high, but rather deep. Each speaker weighs a hefty 176 pounds. Rather than binding posts on the rear panel, the Vantage Live has ST-Type fiber-optic ports that connect to the included controller, a preamp-sized chassis that is the system's heart. The controller connects to your network through Ethernet or via a supplied Wi-Fi dongle, offers an extensive complement of digital and analog inputs (see Specs & Pricing), provides source switching, has integral streaming functions, and sends a digital output via fiber-optic cables to the speakers. The system is fully MQA compatible and is a Roon Endpoint. The music-management app SEEK is included, and although I didn't use this app, it's unlikely that it approaches Roon's unparalleled capabilities and user experience. Featuring electronics designed and built by Bel Canto, the controller converts incoming analog signals to digital for transmission to the speakers. The controller's phono input isn't an afterthought; it offers variable gain and loading to accommodate a range of cartridges, and as we'll see, sounds surprisingly good. Unlike some integrated systems, the Vantage Live doesn't incorporate DSP room correction.

The Vantage Live offers a wide range of features and set-up options via the controller. A "Tilt" control allows you to subtly shift the tonal

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balance with a bass cut and treble boost, or bass boost and treble cut in 0.6dB steps, with a hinge point of 775Hz. The "Bass EQ" adjustment can boost or attenuate the bass level in 0.6dB steps up to ±3dB. If you decide to augment the Vantage Live with a subwoofer, you can engage a second-order high-pass filter to keep low bass out of the Vantage Live. A USB-A port allows you to access music stored on a hard-disk drive connected to the port. The system is UPnP and Roon-ready compliant, and a machined metal remote control provides complete system control, including a balance adjustment.

The 8.75" woofer and 7.25" mid/bass driver feature YG's BilletCore technology, in which the diaphragms are machined from solid blocks of aluminum. The result is a cone that is incredibly stiff and resistant to flexing, while also being lightweight—the holy grail of driver design. This manufacturing method is also incredibly expensive; it takes the five-axis, half-million-dollar Gildermeister CNC machine an hour to turn an 11-pound aluminum billet into a 45g woofer cone. The 7.25" midrange diaphragm is also machined from solid billet. The soft-dome tweeter is YG's ForgeCore design in which the magnet system serves as both motor and enclosure. This unique optimization of both motor and enclosure in a single structure reportedly lowers distortion.

As mentioned, each loudspeaker receives a digital datastream from the controller. Inside the speaker, the digital signal is split up into three frequency bands. A digital-domain crossover filters the wideband signal by performing mathematical computations on the digital data representing the music. The three band-limited digital signals—bass to drive the woofer, midband frequencies to the midrange driver, and treble to the tweeter—are then independently converted to analog via one of three DACs. Each DAC drives custom Class A I/V (current-to-voltage converter). The current-to-voltage converter exerts a significant influence on the DAC's sound; most are realized with op-amps. A discrete current-to-voltage converter is a tweaky approach. A voltage gain stage, realized with MELF high-precision resistors (made by Vishay), drives a low-gain 700W discrete switching (Class D) amplifier. This means that the Vantage Live is tri-amplified with 2100 watts total per speaker.

This architecture, in which the amplifier outputs are connected directly to the driver with no crossover components in the signal path, confers considerable advantages. The benefit of removing the inductors, capacitors, and resistors of an analog crossover cannot be overstated. This is particularly true of removing the large series inductor in the woofer circuit—a crossover part that reduces the amplifier's ability to control the woofer's motion. Moreover, the crossover can have any characteristics of slope and phase that the designer specifies without the limitations of analog components. DSP crossovers also make it possible to program small response variations to compensate for less-than-linear driver behavior. Finally, the amplifier designer can design the amplifier circuit tailored precisely to the driver's characteristic rather than building a general-purpose amplifier that will work under entirely unknown conditions.

In short, the Vantage Live is the high end's most ambitious attempt yet at creating an integrated system.

## Listening

Although I briefly auditioned the Vantage Live at YG's factory, it was only in the familiar setting of my listening room that I discovered that the Vantage Live sounds different from just about any system I've heard before in this price range. If you've ever put on a direct-to-disc LP and heard a sudden increase in that sense of presence, of the removal of "something" between you and the music, you have an idea of how Vantage Live sounds. The Vantage Live has a crystalline clarity, a dynamic verve, and an immediacy that are striking, much in the way a direct-to-disc LP exhibits those characteristics.

Part of this quality is due to the speaker's overall voicing, which has a decidedly extroverted personality. The midrange is projected forward in front of the speakers rather than laying back. But this heightened presence doesn't sound like a coloration or an unnatural emphasis on a band of frequencies in the presence range (1–4kHz), but, rather, as if a scrim between you and the music has been stripped away. Jonathan Valin had recently put me on to the album *Jederman Revisited* by Dutch blues master Hans Theessink, an album that perfectly highlighted the Vantage Live's extraordinary magic act of conjuring up the performer in your listening room. Theessink's exquisitely recorded voice and slide guitar had such realism and presence it was uncanny. I had the same impression with Melody Gardot's gorgeous vocal on her album *Sunset in the Blue*—her voice projected forward, seemingly *right there*, vividly present. Or try Ruth Moody on her album *These Wilder Things*. In the sense of midrange realism and presence, and of the sound being completely detached from the speakers, the Vantage Live was reminiscent of a full-range planar loudspeaker. Which is high praise, indeed.

I thought of the Vantage Live's signal path, and how the design affects the product's sound. Each of the Vantage Live's three drivers is powered by its own Class D amplifier connected directly to the driver with no crossover components in the signal path. Removing the resistors, inductors, capacitors, and long speaker cables between the amplifier and driver may be responsible for the Vantage Live's presence and immediacy. Significantly, the Vantage Live didn't exhibit the characteristics I associate with some Class D amplifiers—a kind of "chalky" whiteness overlaying timbres. I have, however, not heard the latest and best switching amplifiers, but I understand that they have made great progress recently. Our Steven Stone, in his review of the Bel Canto Ref 600M monoblocks [Issue 268] proclaimed these amps to be of reference quality. Hearing Bel Canto's amplifiers in the Vantage Live, without crossover parts in the signal path, has elevated my view of switching-amplifier technology.

The advantage of connecting the loudspeaker driver directly to the power amplifier output terminals is particularly beneficial in the bass, where Class D amplification excels. Removing the large series inductor of an analog crossover in the woofer circuit allows the amplifier to take iron-fisted control over the movement of the woofer cone, both by virtue of the Class D design

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(including its vanishingly low output impedance) and the direct connection between amp and speaker driver with no intervening crossover components. You can hear these technical advantages in the Vantage Live's bass, which is tuneful, extended, and precise in pitch and dynamics. The sealed enclosure, coupled with the Class D amplification, confers a sense of clarity in bass lines. The Vantage Live is very resolving in the bass, clearly revealing the starts and stops of notes, as well as their pitch and texture. The bottom end is the antithesis of thick, slow, and confused. I really enjoyed this aspect of the Vantage Live. Ray Brown's acoustic instrument on *Soular Energy*, Ernest Tubbs' electric bass on the new Simon Phillips album *Protocol V*, and the double-bass section of the orchestra on *The Arnold Overtures* [Reference Recordings 192/24] were all exemplary, with every note clearly articulated. Moreover, the Vantage Live has superb dynamic agility in the bottom end, with sudden attacks, rapid decays, and wide dynamic swings. These sonic characteristics add up to a musical presentation with a powerful rhythmic drive, or what the British call PRaT ("pace, rhythm, and timing"). This bass clarity was coupled with a warmth and weight, a nice combination that provides a strong rhythmic and harmonic foundation for the music. A good example is the big-band arrangement (with a Hammond B-3) of Stevie Wonder's "I Wish" by Dave Seibels with Gordon Goodwin's Big Phat Band. The Vantage Live's bass solidity, taut pitch definition, and effortless dynamics combined to make this track rhythmically powerful and thrilling. The complex instrumental lines remained coherent at high levels rather than congealing. This track revealed many virtues of the Vantage Live, but also its somewhat unforgiving character in the treble. This recording is a bit bright—the upper harmonics of the brass and woodwinds are on the steely side, and the cymbals are a little hot. The Vantage Live isn't a speaker that glosses over or softens these overly bright recordings.

To give you my raw, in-the-moment impressions of the Vantage Live, I'm going to include my verbatim listening notes about the track "Cousin Dupree" from Steely Dan's *Two Against Nature*. This is a spectacular recording, and one that reveals so much about many aspects of an audio system's performance. This is what I wrote in my notes the moment just after this track ended: "Something different about this speaker; clarity, pristine, crystalline. Every musical line clearly resolved. Background vocals so easily audible rather than hinted at or as an undifferentiated sound. Massive dynamic speed and snap. Very punchy. Powerful rhythmic drive. Huge stage, wider than it is deep. Upbeat, alive, and vivid. Great clarity of instrumental line."

The Vantage Live plays far bigger than its size suggests, in many ways. Spatially, the Vantage Live throws a wide and deep soundstage—try *The Cowboys* Overture from *John Williams at the Movies* [Reference Recordings 192/24], for example. The Vantage Live was notable for the way it threw a tangible soundstage even when I was sitting off-axis. The image didn't collapse as I moved to the side, an important consideration for two (or more) person listening. The speaker also sounds bigger than its size in the bass, with a solidity and extension more in line with much larger speakers. Similarly, the Vantage Live played big dynamically, with a startling physicality on kick drum and the big brass tuttis of the John Williams album, for examples.

**This is a system that needs no apology for its convenience or any equivocation when describing its sound quality.**

I was pleasantly surprised by the Vantage Live's performance with streaming (Tidal and Qobuz), but completely taken aback by how good it sounded playing vinyl. The Vantage Live's controller digitizes analog signals, including phono signals. I don't know what alchemy is in Vantage Live's controller chassis, but vinyl sounded shockingly great through the Vantage Live. In previous products I've auditioned that digitize phono signals, the losses have been significant—reductions of air and space, truncation of the soundstage, reduction in immediacy, and a hardness overlaying midrange and treble textures. I pulled out all the most challenging LPs that I know intimately and was repeatedly shocked by the Vantage Live's performance with vinyl. *Satchmo Plays King Oliver*, the classic direct-to-disc *For Duke*, MoFi One-Step pressings of Yes' *Fragile* or Santana's *Abraxis*, Phoebe Snow's first album on a superb Analogue Productions 45rpm remaster—you get the idea. The eerie sense of space and presence on "St. James Infirmary" from *Satchmo Plays King Oliver* wasn't foreshortened, and the cymbal crash at the end hung in space without being truncated and with no added grunge. These spectacular LPs, all made from pure analog sources, still sounded spectacular through the Vantage Live and its phonostage, despite the analog-to-digital and digital-to-analog conversions. The quality of the Vantage Live's phono section says much about the product's ambition as a serious alternative to a component-based system.

## Conclusion

YG Acoustics' $59,800 Vantage Live integrated system is a bold venture into relatively uncharted territory. Will audiophiles give up the ability to mix and match components, upgrade a single product, audition different cables, and tailor a system to their tastes for the convenience of an all-in-one package? Will music lovers who are turned off by the complexity of component audio embrace a $60k system? Those questions have yet to be answered. It will be interesting to learn whether the Vantage Live is a commercial success.

There's no question, however, as to the Vantage Live's high-end credentials. This is a system that needs no apology for its convenience or any equivocation when describing its sound quality. In fact, this new YG system's architecture confers some outstanding sonic qualities including superb bass definition and a midrange with a startling sense of clarity and immediacy. The Vantage Live sounds like a full-fledged high-quality system that just happens to offer ease of setup, is simple to use on a daily basis, is relatively unobtrusive, and has handsome good looks.

That sounds to me like a recipe for bringing high-end audio values and performance to an entirely new audience. tas

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# Heavenly Soundworks Five17

## Digital Legerdemain

Robert E. Greene

**It has been just over 25 years since I reviewed the** Quadrature Model 5, the first American DSP-based speaker (Issue 107) and declared it a revolution in the making. In the intervening two-and-a-half decades, the DSP revolution has indeed spread around in audio quite a lot, with digital room correction devices and digital EQ being widespread—really widespread. Roon, for example, offers DSP EQ as an option. And various devices have arrived to apply DSP processing to the signal in ways adapted to the speaker at hand—notably the remarkable Devialet SAM (Speaker Active Matching) system that I reviewed in Issue 293. And on occasion, speakers based on DSP have appeared, recent notable ones being the Dutch & Dutch 8c and the Kii Audio 3. Still, the appearance of a new DSP-based speaker remains relatively rare and something to take a special interest in.

Heavenly Soundworks is a newcomer on the high-end audio scene. It is a relatively small U.S.-based company, with the Five17 being its first product, but other, larger, and more expensive designs are in the works. The Five17 is a rather small speaker, but it offers impressive bass extension for its size as well as the claims of flat response and phase linearity that should come with the territory in DSP speakers. Its design approach is, however, quite different from the Dutch & Dutch and Kii 3, which focus on controlled directivity (involving narrowed dispersion in the higher frequencies). The Five17 pursues something else entirely—a wide pattern all the way from bottom to top.

### The Speaker in Physical Terms and the Rationale for It

The Five17 is a three-way speaker, with a small (5") bass driver supplemented by two 8" passive radiators on the cabinet sides, a 3.5" midrange driver, and 1" tweeter. Tri-amplification is from a Hypex nCore Class D module and is internal to the speaker, and crossovers are done by DSP. The speakers will accept an analog input, converted to digital internally, but the design is really oriented towards digital operation. There is a remote control to set the volume level and choose the preset curves (discussed in the next section).

Heavenly is not revealing the source of its drivers, only that they have been carefully selected after experimenting with many possibilities. It is also closed-mouthed about its crossover design. But the composite effect of the small drivers, especially the midrange, would be expected to be an unusually wide radiation pattern. And this actually happens, on the whole. In the NRC measurements I've seen, the level at 45 degrees off-axis at 2kHz is practically the same as the on-axis level, and even at 75 degrees off-axis it is down only around 5dB. This is quite different behavior from, say, the Dutch & Dutch 8C, which is down about 10dB from its 200Hz level at 3kHz at 75 degrees off-axis, and at only 45 degrees is down 5dB from its 200Hz level. In the Dutch & Dutch, DSP is being used for something else; the difference in the Heavenly is quite deliberate. Heavenly's people, the father and son team of Kevin and Jonathan Couch (Kevin does the audio engineering, Jonathan the industrial design), firmly believe in this business of wide pattern.

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## Specs & Pricing

**System:** Three-way active (tri-amped) speakers, with remote volume control and response presets (three)
**Driver complement:** 1" tweeter, 3½" midrange, 5" woofer, two 8" side-firing passive radiators per speaker
**Frequency response:** ±1dB 30Hz–20kHz, –3dB at 27Hz, –6dB at 24Hz
**Inputs:** AES/EBU digital, SPDIF digital, TosLink, plus analog input (internal A-to-D conversion), balanced XLR, unbalanced RCA
**Internal amplifier power:** 100W tweeter, 125W (bass), 125W (midrange) (Hypex modules)
**Max output level:** 108dB continuous @1m, music source
**Dimensions:** 8.5" x 15.25" x 11.5"
**Weight:** 24 lbs. each
**Price:** $10,000/pr.

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### Volume Compensation

A striking option is available in the Five17: Fletcher-Munson compensation for reduced listening level. This involves boosting the bass to offset the fact that as volume is reduced the perceived loudness of low frequencies drops faster than the perceived drop in the midrange. Quite a large boost is implemented in the Five17, amounting to over 5dB at 50Hz on one setting, and I estimate another 3dB or so on the more extreme setting (on the remote these are labeled F2 and F3, with F1 being the "neutral setting"). Which of these works best will depend on level, room, and, of course, recording.

It turned out that this was quite useful in my experience. I used setting F2 a lot. The actual level of live orchestral music at close range (where recordings are made) is not astronomical, but it is somewhat higher than most home listening rooms comfortably accommodate, and the result is that some extra bass energy can be very useful if you are not blasting away but are intent on hearing a natural balance.

In a concert hall, the sound at distance has extra bass because a good concert hall lifts the bass in the reverberant field more than it does higher frequencies, and the fraction of the sound that is reverberant field is higher at increased distance. For the same reason, highs are reduced at a distance. So, the bass-lifting kind of compensation makes sense, even at the levels corresponding to live sound at a certain distance. In any case, it is a useful thing to have available. It is worth noticing in this connection that the "target curves" of DSP room correction devices are often recommended to be elevated in the bass somewhat. A complex set of issues is involved here, but in any case, I found the presets provided in the Five17 desirable. Of course, one could do this by the also-available user-controllable EQ (to be discussed below), but it is very convenient to have this instantly available on the remote control.

### Measurements and History

The measurements on the website for Heavenly Soundworks show very flat and smooth response. This is one of the things that got me interested in the Five17s in the first place. But there is a slightly convoluted history here.

The NRC measurements on the early version of the speaker looked rather bumpy. But Heavenly discovered that there were errors in the measurements of their own that they used to set the response of the speaker, this being easily controlled in a DSP speaker. This was corrected, and the speaker now really is smooth and flat. You can read this story in detail at heavenlysoundworks.com/post/in-pursuit-of-perfection. If you are interested in measurements, you should check this out.

Meanwhile, my own measurements on the current, presumably final version show flatter and smoother response than most speakers—with one exception. The upper frequencies are elevated, smoothly but definitely. And this counts audibly. You really need to shelve the treble down to get natural balance. The speaker sounds somewhat midrange-recessed because of these elevated highs, an effect emphasized by the fact that the area around 500–1000Hz is down in level off-axis compared to around 3kHz. More on this point later.

### The Built-in EQ

The balance of the Five17 is adjustable. Part of the Hypex amplification internal to the Five17 is EQ adjustment, which you can do via computer and then store in the Five17s themselves, so you do not need to leave the computer attached. This is useful—indeed, it is really important, since otherwise the combination of the rising response on-axis and the wide pattern results in a top-end orientation, which is not really what you want for the vast bulk of recordings. The EQ is easily done—and shown on the computer screen before you install it. It would be awkward to change this to fit each recording, though you could. But it is easy to install once and for all, and indeed one can install three settings on the remote control, which would enable quick change to match a given recording. This is a good feature to have, and you should check it out. It is not heavily emphasized in the owner's manual, but it is well worth looking into.

**A striking option is available in the Five17: Fletcher-Munson compensation for reduced listening level.**

### The Sound of the Speakers, When Set Just Right

To some extent, when a speaker has built in EQ—not just level controls on the drivers like those of the old days (the AR3, for example), but actual EQ in detail—reviewing it is talking about a moving target. You can get in there and change the sound a lot. In a sense, you become a

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participant in the design process. Most speaker reviews amount in good part to a more or less poetic description of what the response of the speaker does to music. Even things like depth of image and so on, many things which do not seem to be a matter of frequency response at first sight, actually are in good part. So, when one encounters a speaker where the response is adjustable, one must think of the review process in a new way.

Of course, nowadays, external DSP EQ makes every speaker adjustable in this sense. The real question about a speaker today is not only how good it sounds, but also how good you can make it sound with such adjustments. Of course, not everything can be changed by such adjustment.

This comes to mind especially with the Five17 since the EQ is built in, even though you can, of course, leave it in its default position. The default position was not, however, in my experience the way to make the speaker sound as good as it can sound. As noted, pulling the top down a few dBs makes the sound better. But it does not make the Heavenly sound exactly like other speakers. Factors other than EQ settings are always involved and reducing the treble level in a wide dispersion speaker does not create the same sound as it does in a speaker with increasing directivity as frequency increases. (Too bad—if nothing counted except on-axis response, one could DSP to make anything sound like anything else. But, of course, this does not quite happen.)

In the Five17s, as with any speaker, there is a kind of ineradicable character which remains even if you make the speaker completely flat in direct arrival. This character, which exists for any speaker but varies from speaker design to speaker design, is in this case derived, I think, from the fact that the far-off-axis response is a bit pushed down in the 750–1500Hz octave, or so I estimate, compared to below and somewhat above that. The really high treble rolls off off-axis, which is true for almost all speakers and is desirable. But the Five17 rolls down in the 750-1500Hz range, while minimally doing so in the octave from 1500–3000Hz. Now, many speakers have some dip over a range of frequencies, but it is often further up in the spectrum. BBC-style two-ways, for example, tend to have a dip off-axis around 3–4kHz and a return to flat at 5kHz. This has a considerably different sonic effect.

In the Five17, if you make it totally flat on-axis—which it is not all that far from being in its default EQ setting, except for that small, general top-end rise—the midrange sounds suppressed somewhat, and the image is recessed, in particular. Whether or not I am correct in my explanation of this, the sound is definitely there as described.

Now, this is not at all unpleasant in many cases. Lots of recordings can afford to be pulled back in this way, and, especially at not too high volume levels, the effect can be pleasant. Sometimes, it is beyond pleasant and verges on the magical. The depth of image can be hypnotic. But the sound is skating somewhat too close for comfort to too much 3kHz and thereabouts, which is not always a desirable effect depending on material.

### How Good Can You Make Them Sound?

As noted, you can change the sound with the built-in EQ. This is easy. One downloads a program online, then attaches a computer via a suitable USB cable, and then adjust the speaker's response (doing each channel separately, but you can copy the setting you come up with on one speaker and transfer it to the other so that they remain pair-matched). This is easy to do. But deciding on the best EQ requires some experimenting. The idea is that you want to add just a little to the part of the range—750–1000Hz, say—that is down off-axis and subtract a little from the region around 2–3kHz that is up in level off-axis, to get a neutral perceived balance.

The question, of course, arises whether this is possible. The direct arrival and the off-axis sound bouncing off the walls are not controllable

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by EQ independently. So, there really is a question. In extreme cases of wild off-axis behavior, the answer would be no, you can't fix it. With the Five17s, which are smooth off-axis, I found that you could make a real improvement by this kind of EQ compensation. Nothing extreme or abrupt should be done, but you can get rid of the sense of pushed-back mids and excess presence to a good extent. Not completely I found—although I may not have worked hard enough.

Since the early reflections and the direct sound are pretty much lumped together perceptually, it makes sense that some compensation is possible. But probably you cannot expect the compensation to be totally successful.

In practice, working with the built-in EQ I got something that sounded "good," smooth, and quite neutrally balanced to my ears. But it took experimentation. In effect, you are doing a bit of speaker design for yourself here. And the amount and kind of EQ needed was room dependent.

I tried the Five17s in two rooms quite different from each other acoustically. What needed to be done was different in the two.

Properly adjusted, the Five17s sound very musical, smooth, clean, and invisible as sources, too. But they always have a distinctive character associated to their radiation pattern. Of course, in a sense, all speakers do. But the directional behavior of the Five17s is unusual in its nature.

In other directions, the Five17 performs well. The bass is surprisingly extended for a speaker of its size, though you cannot really crank it with bass-heavy material in a large room without running up against limits. The speaker is, as I understand it, protected from damage, but really high levels start to make it sound compressed and a bit distorted in bass-heavy material—not that this was an issue for me in the relatively small rooms I was using and at the natural (not-too-high) levels I prefer. But the Five17s are designed it seems for rooms of small to moderate size—if you want to fill a ballroom, Heavenly has larger models in the works that are considerably more expensive.

### Overall

Putting all this together was a fascinating experience. Getting the EQ tweaked out just right took some time, but the result was impressive in many respects. The depth of image was very lifelike, and aspects of the music emerged that might have passed unnoticed with other speakers. To take a random example, the Telarc recording of the Debussy and Ravel string quartets played by the Cleveland Quartet (an Aubort/Nickrenz recording masterpiece) had a realistic ring to the pizzicato in the second movement of the Ravel, which is seldom heard in music reproduced by speakers, a kind of subtle sonic spectacular in a context—a string quartet recording—

where spectacle is not really expected.

Or take the Centaur CD of the late William Parker singing Copland's *Old American Songs*. Word clarity was perfect; the animal sounds of "I bought me a cat" were startlingly vivid. Parker is sadly no longer with us, but his marvelous singing lives on.

The fabulous Rimsky-Korsakov *Scheherazade* recorded by Aubort/Nickrenz—with the St. Louis Symphony, Semkov conducting, in Powell Hall—was too recessed and unnaturally edgy with the default EQ, but with the right user-chosen EQ setting it sounded very convincingly like the sound one hears in Powell (to the extent I can remember—it has been a while) and, in any case, sounded very natural and like an orchestra in concert in a good, or in this case, super-good venue.

Note in this connection that the Five17s need to be listened to on a lower axis than might arise if you are close to them sitting on a chair of regular height. The stands supplied and, indeed, the speakers themselves look elegant, but the stands really ought to be higher. You could put the stands on pedestals—they are flat bottomed and would be stable placed on say an eight-inch-thick slab of some sort. Getting on the correct axis makes a considerable difference. Sitting above the ideal axis, the sound is just too recessed.

In sum, I had an intriguing time with the Five17s. There are a lot of interesting thoughts here. And if it takes some doing to end up with the best results, still the best results are good ones. Their sound is unusual but unusually good in a certain way. The difference between the Five17s and something like the KEF Reference 3s that I had around for my Devialet SAM system review is large, the KEFs being rolled off-axis starting at 500Hz on up (exactly what a speaker ought to be doing off-axis—or even on).

As designers get more control over frequency response and radiation pattern, it becomes more and more clear that they are not all aiming at the same thing. This situation makes it even more important that one listens carefully for oneself. No one else can walk that path for you, of trying to decide what you want your speakers to do. The Five17s present a distinctive view and a definite philosophy of how a loudspeaker should behave. It is surely worth checking them out—there is not much else around like them, since most DSP designers are going via the narrow-pattern controlled-directivity route and for a slight, or not so slight, downslope in on-axis response. The Five17s do neither of those things but present a different view of neutral sound, and one which can be convincing, indeed. Your choice. What they do, they do very well, and in a remarkably small and elegant package. tas


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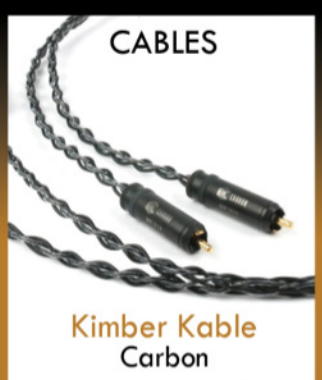

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# Graham Audio LS5/5

## Speaking with a Single Neutral Voice

Paul Seydor

**Most serious audiophiles of my generation think** they have a pretty good idea of what to expect from a loudspeaker designed by or for the British Broadcasting Corporation (BBC), and they would probably be right. With only a few exceptions, these speakers are small-to-medium two-ways, with a reflex-loaded bass/midrange driver crossed over to a tweeter, stand-mounted, and made to be situated as far as manageable from adjoining walls. Overall tonal balance is neutral or "natural," often mildly on the warm side with a corresponding slight recession in the presence region (the so-called "Gundry dip"); top ends are very kind to their dogs; there is little to no deep bass, and equally little to no ability to sustain very loud playback levels in large rooms. Yet for many listeners, particularly those whose tastes run to live, unamplified acoustic music, these are easy sacrifices to accept when the payoff is the overall accuracy of response, truth to timbre, low distortion, and precise imaging that constitute the cornerstones of the best BBC loudspeakers.

What is less well known is that back in the day the BBC's research was considerably more extensive than even well-informed audiophiles and audio reviewers ever knew. Specifically, in 1959 the corporation commenced research on a loudspeaker project intended to address some of the limitations of smaller speakers. The two lead engineers were Spencer Hughes, later of Spendor fame, and Dudley Harwood, later of Harbeth fame, who detailed its development in a BBC report written in 1967, the year the fruit of their research, the LS5/5, was introduced. Highly technical, this report nevertheless so clearly sets forth the thinking behind the design that even laymen can grasp the concepts (Google "LS5/5 BBC report"). The 5/5 was a three-way configured with the woofer and midrange drivers flanking the tweeter in a vertical array, the cabinet a little larger but far heavier than the standard two cubic feet of a large bookshelf speaker. Its most unusual feature was what looked like a secondary baffle attached in front of the baffle on which the drivers were mounted. Into this front baffle were cut two slots (AKA "slits"), each one leaving the bass and midrange drivers *partially* unobstructed. The tweeter was mounted unobstructed between the slots.

The purpose of the slots was to make for a wider, more uniform dispersion pattern to obviate the need for head-in-the-vise sweet-spot listening. As with all BBC loudspeakers, the LS5/5 project arose out of a professional need for mixers to hear a well-balanced sound at large mixing consoles, which are often wide enough to take the mixer, engineer, or producer well out of the preferred listening window of speakers with narrow dispersion as they move back and forth operating the controls. Allowing only part of the cone of the driver to be unobstructed in effect makes it behave like a smaller driver, better coordinating the sizes of the drivers with the lengths of the frequencies at the crossover points. One of the biggest problems with cone-type speakers is that as frequencies get higher, their wavelengths become shorter, and once they're shorter than the diameter of the driver, dispersion progressively narrows until you have to be right on the axis of the speaker to get a well-balanced sound. An additional problem is what can happen at the crossover points. Non-uniform dispersion resulting from the different sizes of the drivers often produces noticeably uneven power response, with narrow- and/or wider-band lobes, which reflect back to and corrupt the on-axis response.

The different ways loudspeaker designers address these issues—from omnidirectionals (like the Muraudio PX-2) to those with near-180-degree frontal radiation (like the old Acoustic Research LST)—are beyond the scope

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of this review. Suffice it to say, one way to do it is with slot-loading. Of course, it's not so simple as all that—for example, if the slot and baffle are not carefully dimensioned, damped, and spaced, you wind up with a Helmholtz resonator that in effect turns the slot into a musical instrument rather than a reproducer. Not for nothing is that BBC report littered with all that math.

Although never sold or distributed outside the BBC, the 5/5 remained in wide use there for a couple of decades and was, I am told, judged by a few resident engineers the best speaker the corporation ever designed. Given its insider reputation, why did it never go beyond the BBC? While as a three-way with a 12-inch woofer, the 5/5 possessed a dynamic window considerably in excess of the smaller two-way monitors and thus more than adequate for most instrumental ensembles, even orchestras, the limitations of drivers of the day still did not allow it to generate the kinds of sound-pressure levels demanded by the makers and producers of rock music, which was by then proliferating the market. The consumer-speaker market was also going in the direction of much larger and more exotic sorts of speakers. So, the 5/5 remained something of an insider secret at the BBC.

But in second decade of this century, Graham Audio, of England, with several successful BBC-design revivals under its belt, decided the time might be right to take a new look at the LS5/5. And who better to entrust the project to than Derek Hughes, already with Graham as consultant and designer and the son of none other than Spencer Hughes himself? Hughes *fils*, who learned a lot of his art and craft from a very early age literally at his father's side has distinguished himself as one of the most gifted and accomplished speaker designers these last few decades of high-end audio. In the late nineties, while still at Spendor, he designed his own version of his father's BC-1, marketed as the SP1/2, long a favorite of Robert Greene and a speaker I owned for a while back then. It had the most neutral tonal balance of any speaker I had ever heard up to that time, and it's still one of the most neutral. The only reason I sold my pair, which I did with *great* reluctance, is that I was completely besotted with Quad ESLs, and living as my wife and I were in one of those lovely but small Spanish houses that proliferate Los Angeles, we literally had no room for another pair of loudspeakers, however excellent. Since then, Hughes has been responsible for bringing several classic BBC models back to life in improved versions, including the LS3/5a and LS3/6 for Stirling Broadcast and the LS5/9 and 5/9f for Graham Audio. Most impressive of all is the recent upgrading of his father's classic BC-1, designated by Graham the LS8/1, which received one of the rare reviews by my colleague Robert Greene that I would characterize as a rave (TAS 323).

With most of the conceptual work on the 5/5 completed back in the sixties, Hughes' task consisted mostly in upgrading the design along practical lines of dynamic range and power handling, and further improving an already pretty wide, flat, and smooth frequency response, plus addressing several issues pertaining to drivers, materials, cabinet construction, and damping. With a proprietary new 12" woofer, a 24mm dome tweeter from SEAS and an in-house-designed 8" midrange to call upon, Hughes managed to tease out a substantial 10dB increase in loudness over the original and a frequency curve specified as 40Hz to 20kHz ± 2dB.

Meanwhile, the cabinet adheres staunchly to the BBC "thin-wall" philosophy by which the walls are designed to flex at lower frequencies where the effect upon the sound is benign. The several small, well-damped resonances at lower frequencies are advantageous because they *are* low in amplitude and dissipate very quickly. By contrast, rigidity-above-all thinking can often result in resonances being pushed up into the midrange and presence regions, where they are more pernicious. These higher resonances, of the kind found in many synthetic materials of nominally greater rigidity and density, may be narrower in band, but they often have higher Qs and thus take longer to die away (i.e., they ring longer). While the thin-wall approach is easy enough to implement in small speakers because the panel lengths are relatively short, it is more difficult with speakers the size of the 5/5. Special bracing at the edges and corners for strength were devised, and new damping materials for vibration control searched out and developed.

The 5/5 is stand mounted. Any suitably sturdy stand of around 19 inches high will do, the idea being to get the tweeter situated at ear height. Stands ($1099/pair) supplied by the importer, On a Higher Note, are made from solid metal, are very strong and rigid, and sit solidly on the floor without rocking. However, the same issues of resonance vis-à-vis rigidity obtain as with the cabinets. If the speakers are rigidly coupled to the stands and the stands in turn rigidly coupled to the floor, you may wind up with a sound that is slightly edgy because, again, this sort of rigidity tends to push any resonances resulting from vibrations coming back to the stand up in frequency. What is needed is some sort of damping or decoupling that doesn't allow the speaker to rock back and forth. The importer's stands are supplied with Blu Tack™, a small amount of which is to be applied to the four corners of the platform. Alternatively, you can get small rubber or sorbothane feet from several sources (Amazon most conveniently). What you're after is something that breaks the vibration path without compromising stability. A thin layer of the Blu Tack™ does the trick perfectly; the whole setup is exceptionally stable while providing just enough lossy damping to keep everything clean and unperturbed from unwanted vibrations. Like all Graham loudspeakers, the 5/5 is voiced with the grilles in place and should be listened to that way.

Before I get to the sound, I'd like to reinforce a comment REG made in his review of the LS8/1 that also applies to this and to many other BBC or BBC-derived speakers (e.g., Harbeth, Stirling Broadcast): "It is not inexpensive and to some eyes—not mine!—may seem not to offer enough technological glitz to justify its price." Allow me to add an exclamation point of my own. The conventional, conservative appearance of the 5/5—drivers in a rectangular wooden box—completely belies the solid scientific thinking, exhaustive testing, meticulous research, and sophistication of design and engineering that went into the 5/5. The quality of parts, materials, and construction, the attention to detail from crossovers to drivers to internal damping,

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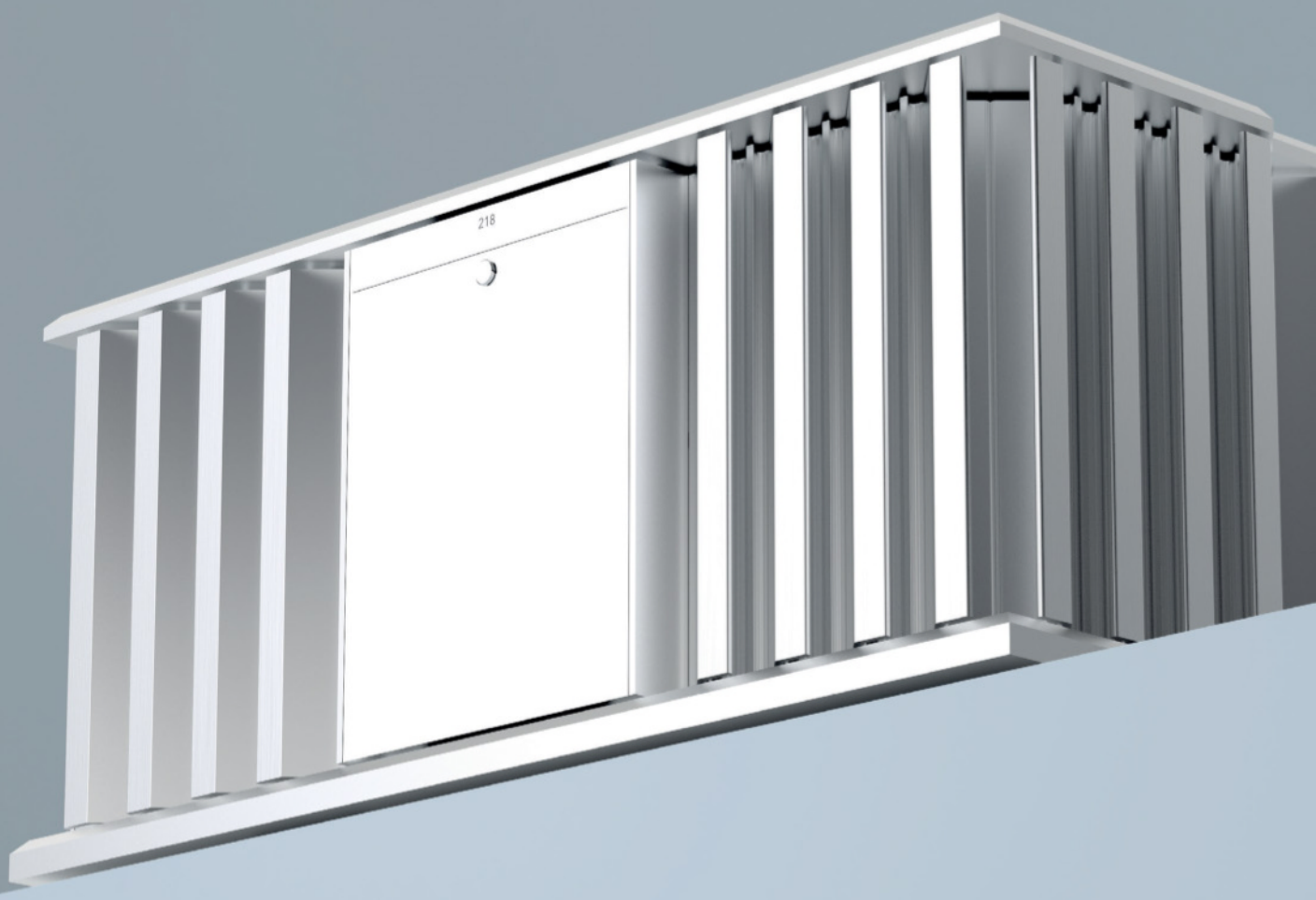


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## Specs & Pricing

**Type:** Three-way, reflex-loaded, stand-mounted loudspeaker
**Frequency response:** 40Hz–20kHz ±2dB
**Sensitivity:** 88dB SPL (2.83V, 1m)
**Maximum level:** Over 104dB/pair at 2 meters
**Impedance:** 8 ohms nominal
**Drivers:** Bass, 12" long-throw; midrange, 7"; tweeter, 1" soft dome
**Recommended power:** 50–250 watts program
**Finish:** Walnut and oak standard
**Dimensions (approx.):** 14" x 27.5" x 19"
**Weight:** 78 lbs.
**Price:** $20,000/pair (stands: $1099/pair)

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and the scrupulous quality control that characterize the product justify its $20k retail. I've heard some audiophiles worry that thin-walled construction equates to flimsy. On the contrary, the 5/5's box weighs in at 78 pounds and is extremely strong, sturdy, astonishingly well damped (give the sides a healthy knuckle rap and your knuckes'll feel it the rest of the day). The exteriors, including the back, are beautifully finished in matched wood veneers (the review samples were covered in rift-cut oak, which yields a far tighter, more linear, and to my taste more attractive grain than the standard cut, but it is also one of the most expensive to mill).

### The Sound

Let's begin with the three principal reasons the LS5/5 was designed in the first place: wider frontal dispersion, greater dynamic range, and deeper bass response. If the slot-loading was employed to answer a specific professional need, it nevertheless has real and substantial advantages for the home listener, too. Apart from those rare occasions on which I've housed omnidirectional speakers, this is perhaps the first time in my several decades in audio where I've been able to hear a consistent distribution of the entire frequency spectrum, including the highs, well off the central axis *without* compromising stereo imaging (more on this in a moment). No head-in-a-vise seating is required if you want to hear the swish of brush against cymbals in a drum set, the ring of the triangle in the third movement of Brahms' Fourth Symphony, all the little details and registrations of the assortment of percussion instruments in music such as Bartok's *Music for Strings, Percussion, and Celesta* or Boulez's *Pli Selon Pli*, the full richness of the overtones of violins and violas, not to mention brass and woodwinds, the ambience and atmosphere that can make the difference between a recording that sounds like a recording and one that really does appear to be a window onto the concert hall. If some portion of your serious listening regularly involves a partner or more, this is one speaker you might consider investigating.

What about imaging? What about soundstaging? And who listens seriously off-axis anyhow? Let me take the last first: I do…sometimes. My sofa is seven feet long, about the same as the distance between the outer front edges of the speakers when their axes are toed in directly toward the center listening seat. But the most relaxing place for me to sit is on the right where I can lean against the side and place a cup of coffee (or a martini if it's that time of day and I'm in the mood) on the armrest. Indeed, this is where I often sit when I am listening sheerly for pleasure—as opposed to the kind of critical listening to equipment when I am in audio reviewing mode—and I don't worry about such things as imaging, soundstaging, detail, resolution, and all the rest of it, just as I don't worry about these things when I'm sitting in a concert or recital hall. Anyhow, is sitting bolt upright with your head clamped in an imaginary vise so that you can hear so-called "true" stereo particularly conducive to a physical posture or a frame of mind receptive to appreciating, let alone enjoying music in the home?

I can't answer that for anyone except myself, but I can say that if you appreciate hearing a well-balanced sound up and down the spectrum, then the LS5/5 achieves this to a remarkable degree. What's more, because I'm not an electronics purist, I regularly use a balance control. Those who eschew same or keep it locked in the high-noon position have no idea how just a little judicious level adjustment between the two channels can assist in realizing a remarkably consistent soundstage in which I can clearly hear the position of soloists or groups within any given ensemble and follow movements when performances are staged for recording—even when I'm well off axis. No question, it's not as "good" as a centered position, but it prevents gross imbalances, it certainly keeps everything from collapsing into one or the other speaker, and it generates few if any imaging artifacts that distract me from the music. Best of all, *the instruments and voices sound like themselves*.

As for imaging precision and stability, the argument against wide dispersion has it that the wider the dispersion the more the sound bounces off the side walls, causing reflections that arrive later and mess up the imaging. There is truth to this—as far as it goes. But it fails to recognize that not all wide dispersion is created equal. As Derek Hughes points out in the interview that accompanies this review (published on theabsolutesound.com), what he (like his father and Dudley Harwood before him) is after is the most *uniform* possible dispersion over a *somewhat* wider window than that afforded by more directional loudspeakers. In the case of LS5/5, this translates into an approximately 60-degree spread from the central axis (see graphs in the BBC report). Like any other BBC monitor, the 5/5 should, of course, be set up so that the axis of each speaker is aimed directly at the central listening position, because that will yield the most precise imaging even if you aren't absolutely centered. But what you definitely should *not* do is what against all logic many audiophiles apparently like to do: aim the speakers straight ahead to get a so-called wider

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and more spacious soundstage. To be sure, if you're sitting far enough away, the dispersion window here is wide enough to let you hear a well-balanced sound, but the penalty is that you screw up the superior imaging of which this speaker is capable in return for a rather diffuse and amorphous soundstage. And believe me, the 5/5 is capable of exceptionally precise imaging.

On all the recordings I regularly use to evaluate such things the 5/5 acquits itself as well as the finest speakers I've ever heard—for example, any of the Quad ESLs I've owned and still own, renowned for their imaging since day one—and better than most: the original Broadway cast of *West Side Story* (particularly in its latest vinyl remastering), where all the big numbers like the Dance at the Gym, the Prologue, "Cool," and "America" occupy a clearly identifiable space with precisely rendered lateral and front-to-back movements of singers and dancers within it; the Bernstein *Carmen* on DG, one of the most thrillingly staged-for-the-gramophone operas I know; ditto the Solti *Aida* (his first one, originally on RCA, now on a superbly remastered [with included Blu-ray Disc] from Decca); the astounding "Dry Bones" and "Set Down Servant" tracks from *Encore*, with the Roger Wagner Chorale live in concert, on which you can easily place the individual singers within the group when they sing or shout ad libs and bang utensils for effect (M&K Realtime direct-to-disc, not hard to find mint copies on Discogs and well worth the effort); *A Procession with Carols on Advent Sunday*, from the Choir of Kings College, Cambridge (Argo vinyl or streaming). This last is particularly instructive because the liner notes describe in great detail how the recording was made, where the choristers enter, how they come forward, where and when they pause, and the point at which they separate on their way to the stalls on either side of the knave.

Then there's the Ellington classic *Jazz Party in Stereo* (vinyl reissue)—how the musicians and engineers reveled in the possibilities of the still new stereophony in these fabulous 1959 sessions! "Tymperturbably Blue" features nine tympani spread across the soundstage playing the full musical scale, while in "*Maleletoba* Spank," the liner notes list the full panoply of percussion instruments and describe how they are positioned across the soundstage. Through the 5/5, they appear precisely as described without confusion or ambiguity.

Of course, a well-miked soloist who is supposed to be in the center is located there and stays there. Use a mono source, or switch to mono if you have that capability, and the image likewise stays right there perfectly centered. While I had the speakers, I found myself listening to several recordings of the Bach suites for solo cello. With the best ones, say, Queryas or Ter Linden (both on Harmonia Mundi), the cello on each recording—they are very different, the former a modern one recorded closer, the latter a period piece set farther back in a more generous ambience—was reproduced with extraordinary focus and presence and stays rooted in one spot, even when I occupied different places on the sofa.

Two final notes about imaging and soundstaging before moving on: First, while the cabinet is outstandingly well behaved and the speaker does not sound boxy, being instead exceptionally open in its presentation, the 5/5 is nevertheless still a box speaker and does not, will not, and cannot propagate sound in the matter of a dipole panel like Quads, Magnepans, or Sanders Sound. If a dipole presentation is what you want, you should look elsewhere from this or any other box speaker. Second, at one point during the evaluations a producer friend of mine dropped by for a listen. Now in retirement, she has over her distinguished four-decade-plus career produced more than 300 classical music recordings, most of high excellence, several award-winning for musical and sonic reasons, quite a number in regular use as references by me, my fellow reviewers at TAS, and reviewers at other audio publications. Within moments of listening to the 5/5, she exclaimed, "My God, do these things ever image!" Enough said.

On to loudness. Throughout most of the listening I used a Benchmark AHB2 amplifier, 100 watts per channel with large current reserves (29 amps) and absolute stability (the 5/5's impedance a nominal and benign 8-ohms). I think I was able to force the amp into clipping just once (cannon blasts on the Telarc *1812*), but even so, the reproduction was always ultra-clean and low distortion, with exceptional grip and control. Graham specifies the efficiency as 88dB sound-pressure-level (2.84 volts at one meter), which puts put it securely in the medium-sensitivity category, with maximum output at 104dB at two meters. By any measure this is extremely loud, much louder than I can sustain for any length of time and certainly louder than you should if you're concerned about the health of your hearing. Whether it's loud enough to satisfy headbangers and other rock listeners, I can't say, but it's certainly loud enough for the rock music that I enjoy, like Buddy Holiday, Paul Simon, and The Rolling Stones. I don't know if Cat Stevens is considered a rock musician or not (he's in the Rock and Roll Hall of Fame), but one of my favorite moments of a sudden leap in dynamics comes at the very end of *Tea for the Tillerman*, when the chorus shouts, "That happy day!" The effect here brought a big grin to my face, not so much for sheer loudness, though it is loud, as for how superbly the 5/5 registered the dynamic contrast. And big, heavily processed and synthesized rock recordings, like Paul Simon's *Graceland*, were powerfully reproduced at formidable levels.

As it happens, my critical listening spot is a little over two meters from the axes of the speakers. In my 2520 cubic-foot listening room (21' by 15' x 8') the combination of the 5/5 and the Benchmark forced me to cry "Uncle" well before the equipment did. I hauled out a number of really big symphonic, choral, and operatic works to put the 5/5 through its paces, like the Berlioz *Te Deum*, a huge work for augmented orchestra (notably in the brass), multiple choirs, and a massive organ (I have several recordings, my favorite the Colin Davis on Philips, but John Nelson's on Virgin has better sound). The 5/5s reproduced it spectacularly at a true "room-filling" level. The same with the Solti/RCA *Aida* (Decca CD or Tidal MQA), another powerhouse recording that can really take the roof off if that's how you care to listen to it.

All this duly said, I must caution that while the 5/5 possesses that difficult-to-define sense of real authority which I've discussed before when reviewing speakers, it is

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not a speaker for *extremely* large rooms, where it will be a bit lost. But in normal-to-larger rooms, it is well-nigh ideal and probably better than many much larger speakers which might overload such spaces. As the Brits like to say, it's a matter of horses for courses.

Its combination of a wide dynamic window and a clean well-controlled cabinet when it comes to resonances and other spurious noises translates into truly refined and exquisite resolution, such that all details are there in right and just proportions, with nothing overemphasized and no hint of an edgy or overly analytical presentation, unless of course that is what is on the recording. Thus, you will hear the piano chords, which must be down some 70dB, bleeding through Jacintha's headphones on her *a cappella* "Moon River" from her Johnny Mercer album (Groovenote, vinyl, SACD, or streaming), rather more clearly, I think, than I've heard on most speakers this side of Quad ESLs, which the 5/5 easily rivals, while surpassing many extravagantly expensive speakers renowned for their so-called "resolution." And the notorious clicking of Martha Argerich's fingernails on any number of her piano recordings (try G*aspard de la Nuit*, DG CD) is there in full evidence. Equally impressive is how composed and confident the 5/5 is handling all sorts of really intricate music without confusion, whether it's all the plucking and picking of the five stringed instruments on *The Dave Grisham Quintet* (vintage vinyl or Qobuz streaming); the contrapuntal lines of Bach's *Goldberg* variations arranged for chamber ensemble; or the craggy uncompromising complexities of Beethoven's *Hammerklavier* (any number of recordings—most recently those by Uchida, Levit, Perahia Steven Osborne, and Nelson Goerner). Piano recordings, by the way, are exceptionally satisfying with these speakers, and they readily reveal the differences both in recording methods and in instruments.

At one point during the evaluations Peter McGrath sent me an MQA copy of a recording he made of the Ehnes Quartet in concert performing Beethoven's opus 130 with the Great Fugue in its original and proper place as the last movement. This is Beethoven with his most intransigently gnarly and thorny both harmonically and with respect to counterpoint and fugal writing. Never have I been able to isolate and follow by ear any of the four instruments and their individual lines that I might want to concentrate on more easily than in this performance over these loudspeakers; yet, paradoxically, never have I heard the piece better presented as a gestalt of musicians in a real location, with gloriously beautiful string tone. I've not yet had a chance to listen to this recording on other speakers and systems, but the 5/5 certainly set the bar way up high.

Turning to the bass end, if the great Spencer Hughes designs had a *bête noire*, it was in the midbass and the deep bass. Of the latter there was little or none, while the former tended to be decidedly on the loose side, albeit by no means unpleasing. The 5/5 is a whole different animal here. First of all, the bass throughout the entire spectrum from, say, high thirties up into the upper bass is superbly strong, well defined, low distortion, and highly articulate. On Stokowsk's *Rhapsodies* album (RCA, vinyl reissue and SACD), the Liszt and Ionesco rhapsodies are reproduced with commanding power, definition, and weight, the lower strings perfectly rendered as regards texture and registration. Double bass on classic jazz recordings like *Soular Energy* is likewise well defined and highly articulate; and the way the 5/5 was able to dig out the one double bass and keep it present on the Sitkovetsky *Goldberg* arrangement for chamber orchestra was very impressive. I've heard some other speakers do as well in this regard, but they are few in number and even farther between. The Bernstein/Vienna Philharmonic arrangement of Beethoven's opus 131 string quartet (DG vintage vinyl, CD, Qobuz hi-res, and Tidal MQA) was reproduced with fabulously gorgeous string tone from every section, the basses again marvelously deep and weighty when they double the cellos (listen no further than the very end of the first phrase of the fugal theme in the opening movement).

With a -2dB point at 40Hz, do you need a subwoofer? If you're not a bass hound, then the easy answer is no. Trying to measure bass response in room is fraught with difficulties, because you wind up measuring the room as much as or more than the speaker itself. But in my room at my listening position, I got excellent bass that easily verified the 40Hz claim and that,

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with room reinforcement, held up down to the mid-thirties before it dropped off. On my several recordings of *Also Sprach Zarathustra*, the 5/5 proved more than sufficient to reproduce the opening 32Hz organ pedal-point solidly and without doubling, assuming it's really there in the first place (in my opinion, the best remains the Mehta on Decca, better even than the Telarc). Likewise, the D minor *Toccata and Fugue* on Kei Koito's *Bach: Organ Masterworks Vol. II* (Claves, CD). So, for most of the review period, I used the speakers as supplied, as is my regular practice when reviewing, and was perfectly happy.

But toward the end I hooked up my REL subwoofer and was glad of it. As Fletcher and Munson demonstrated decades ago, at any given loudness level the ear is less sensitive to bass frequencies than to the rest of the range. I often find that in domestic settings with most full-range speakers, even very large ones, if you're going to try to bring that bottom octave to octave-and-a-half into a convincing balance with the rest of the range, you're sometimes forced into playback at levels too loud for the midrange and especially the presence region. This is where a good bass tone-control can really help, and the 5/5 certainly has a robust enough combination of efficiency and power handling to take a healthy boost. But most bass tone controls cover a few to several octaves, while the nice thing about a good subwoofer is that you can more precisely target the deep low-end without affecting everything from the midbass to in some cases the lower midrange. Take the *Zarathustra* recording: with a little help from the REL, the pedal point stays just that degree or three more present, more foundational if you will, during the big orchestral chords, which is surely what Strauss intended. Ditto for the organ in the massive climaxes of the Berlioz *Te Deum*, with the multiple choruses and augmented brass resounding above it.

Which brings me to overall tonal balance. Perhaps the best way to introduce that subject is to state that day after day on recording after recording over several months the 5/5 left me with the feeling that I was hearing back to the original source in a way that I've experienced with very few speakers. This uncanny impression of every recording sounding unique unto itself is not new to me, but it's been a rare enough occurance over my 50-plus years pursuing high-end audio that I need fewer than the fingers on both hands to tally the number of speakers which have allowed me to experience it. Fidelity like this, of course, breaks down into many aspects. Well recorded strings are a complete joy, as I discovered anew when I chanced upon another Sitkovetsky arrangement of the *Goldberg* variations, this time for a string trio on Orfeo, and a truly lovely sound it is. Accurate reproduction of voices is at the heart of BBC research, and it almost goes without saying that voices of every type and persuasion are beautifully reproduced, whether Ella her most virtuosic, Sinatra at his swingingest or most melancholy, Julie London at her most coolly detached, Doris Day at her sunniest, Fischer-Dieskau at his most resigned in *Das Lied*, Joyce DiDonato at her most grief stricken in *Winterreise*, or Gundula Janowitz, so radiant in *Four Last Songs*.

Of course, no speaker is perfectly neutral or perfect, period. As is often the case with a component, especially a transducer, that gives the impression of great neutrality, there is the worry that maybe it's too neutral, too gray, too reserved, insufficiently colorful, not dynamic enough, withdrawn even—you get the idea. I believe I've said enough throughout this review to suggest that none of these things applies to the 5/5. At the same time, however, it's not one of those speakers that possesses a single pronounced characteristic or collection of characteristics that cause audiophiles looking for something more interventionist to blow fingered kisses to the sky. In this sense it puts me in mind of some wise words written by the late Siegfried Linkwitz, audio theorist, researcher, designer, and one of the few people in high-end audio you could call a scientist without crossing your fingers behind your back: "Beware of exciting loudspeakers, they do not wear well over time. The easier it is to describe specific characteristics of a loudspeaker, the less likely the loudspeaker is a neutral transducer from electrical signal in to the acoustical signal out. The loudspeaker should just reproduce what is in the recording, not add to it nor subtract from it. Thus, what you hear should still hold surprises and not be tinted by familiar sameness" (linkwitzlab.com/accurate%20stereo%20performance.htm). (Makes me think speaker designers would do well to adopt the physician's mantra: First, do no harm.)

So it is with the 5/5. Highs are not always crisp, the midrange is not always luscious and succulent, and the presence region does not constantly project into room if the recording does not exhibit these things; and lord knows, it's not even "lively" if the recording happens to be too distant or just plain dull. But such is its ability to engage that my sense of involvement was consistently complete, so that I rarely wanted to stop listening, digging out recording after recording, especially long cherished favorites, just to hear how beautiful they can sound when they are beautifully recorded and faithfully reproduced. And my goodness, these speakers certainly get my toes to tapping on anything that's designed to do that, making it hard for me to sit still during the accelerating virtuoso climax to the morning raga on Ali Akbar Kahn's *Morning and Evening Ragas* (Connoisseur Society, vintage vinyl), and impossible to prevent me grabbing my baton to conduct my favorite recordings of *The Rite of Spring*. I was happy to luxuriate, indeed wallow in the sinfully rich sonorities of Strauss' *Don Quixote* in the Levine/MET orchestra recording (DG CD), the glorious opulence of Tchaikovsky's *Sleeping Beauty* (Dorati/Concertgebouw, Philips CD), or the sizzling riot of brass, swing, and drive in Bill Berry's *For Duke* (M&K Realtime direct-to-disc).

As with most audio reviewers, my reviews tend to focus on recordings that have good sound, especially of demonstration or reference caliber. But those are far from my steady diet. Most recordings of most music fall along a spectrum from excellent to bad, while some are very bad. I have two favorites that illustrate exactly what I'm talking about. The Frank Sinatra/Billy May *Come Swing with Me!* (Capitol, vinyl reissue, CD, and streaming) and the Bernstein/New York Philharmonic recording of the suite from Copland's *Appalachian Spring* (Sony, vintage vinyl and CD) are perhaps not truly *bad*, but

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each suffers from an aggressive brightness, in the case of Copland almost searingly so, right in the presence region, such that I find them not pleasant on most speakers, particularly contemporary speakers that build in a rising top end. Through the 5/5 these recordings don't sound any better than they are, but they don't sound any worse either, which is to say, they're at least tolerable or better. Of course, I do take full advantage of the eight-band equalizer on my McIntosh C53 to tame them, not least because I love the performances, especially the Bernstein (my favorite recording of the suite), though I should add that far less correction is required with the 5/5 than with most other speakers I've reviewed. Listening fatigue as a function of this speaker's tonal profile and distortion is in any practical sense nonexistent.

To put the 5/5's tonal balance in more technical terms, I took some in-room measurements using the OmniMic V2 setup from Dayton Audio. What I got tended to confirm what I was hearing. The overall response is smooth and linear, with a slight downward slope, which is desirable, from around 100Hz to around 15kHz. Evident in read-out was the BBC's old friend the Gundry dip in the presence region (3kHz to around 7kHz), but I was rarely aware of it as such in the listening. (There's a complex technical reason why this is often the case with a Gundry dip; see REG's review, already cited, of the LS8/1, which has a similar characteristic, for a detailed explanation.) The only other anomaly is another dip between 150-200Hz, owing to the usual "floor bounce" effect. But in my room, particularly at the centered listening spot, the audibility of this was relatively slight because the dip itself is of fairly narrow band and shallow, while in the immediately adjacent regions above and below it the response is a bit elevated, which works against any impression of a hole in that region or any overall thinning out of the upper bass. To put it another way, I would not describe the sound of this speaker as either overly or insufficiently warm, neither is it in any way thin or lean. But then this is merely to reiterate that the speaker as a whole really does present a tonal balance that strikes me as essentially neutral with vanishingly low coloration.

A final point before concluding: As with most speakers that employ multiple drivers, the 5/5's derive from different sources and are made from different materials. Yet at no time during the long evaluation period did I ever feel I was listening to different drivers, different materials, different colorations. So carefully has Hughes chosen them and so scrupulously has he matched and optimized them through size, crossover, slotting, and other engineering solutions, not least very careful listening, to work as an integrated system, that the LS5/5 always appeared to speak with a single voice from top to bottom with great transparency and outstanding coherence.

## Conclusion

Around the time I was wrapping up this review I was told of a gathering of local audiophiles and musicians at a Canadian shop that sells the 5/5, the idea being to play musical selections on several speaker systems to see how the two groups evaluated them. At some point during the proceedings the 5/5 took its turn in the hot seat. After putting it through its paces, the proprietor prepared to move them aside, whereupon the musicians got up and began putting on their coats. "We're not finished yet," said one of the audiophiles. "But we are," replied one of the musicians. "*That's* the speaker. That's the one that sounds like music, like real instruments. We don't need to hear anything else." And they left. Take the anecdote for what it's worth, but after living with the LS5/5s for nearly half a year now, I believe I know exactly what they meant. This loudspeaker belongs to a tiny group of my own personal "elite" that I could happily live with the remainder of my days, confident that I would hear every source reproduced to an extremely high level of fidelity indeed. tas

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# LSA Warp 1 Power Amplifier

## Class A Class D

Steven Stone

**Last month I received a note from my local power provider,** Excel Energy, informing me that it would be installing a "smart meter" and placing me on a tiered pricing schedule. During "peak hours," from 3pm to 7pm, my rate would go up substantially (like three times), while during "off-peak" hours it would dip slightly below current rates. I mentally shrugged my shoulders, concluding that for me the days of leaving a bunch of Class A power amps idling 24/7 were drawing to a close.

About a week later the LSA Warp 1 power amplifier arrived on my doorstep. Its specifications and early reviews held out the possibility that this might be a Class D power amplifier that could successfully replace an energy-guzzling traditional Class A power amp. Let's see.

### Technical Tour

The heart of the Warp 1 is a Texas Instruments TPA3255 "Purepath" Class D circuit. This primary part has been mated with a carefully cobbled layout. According to Underwood Hi-Fi, "the state-of-the-art layout was made using double planes stitched together with thousands of vias wherever an ultra-low impedance path was needed. Vias are traces that connect layers of a circuit board. They are made by drilling a hole and plating metal on the walls. For a two-layer board, vias connect the trace on the top to the bottom side." The grounding scheme utilizes a star-hub methodology, and power input paths were designed to be as short as physically possible. Both help reduce potential noise issues.

The PCB boards themselves are 2mm thick FR4 with 2-ounce (70um thick) copper traces and an electroless nickel immersion gold finish. Output filter inductors are all high-current, low-distortion, shielded, CoilCraft flat-copper-wire SER that allow for maximum current flow with minimum distortion.

For the input buffer and preamplifier sections, a Texas Instruments OPA1642/1656 op-amp and OPA 1637 balanced drivers were employed, along with a "bootstrapped" input buffer. Combined with its 600W switching-mode power supply, the result is an extremely quiet power amplifier with a signal-to-noise ratio that achieves numbers consistent with the performance of the best DACs.

### Setup and Ergonomics

The overall fit and finish of the Warp 1's exterior is clean and workmanlike. Other than silver side columns and rounded corners, the Warp 1 is essentially a black-satin-finished rectangular box. While the overall look is more individualistic than a plain silver or black box, it certainly lacks the blingy features and details that have become standard fare for many high-end power amplifiers. I consider this a good thing because I'm not a blingy guy. For me, a power amplifier is an electronic device designed to perform a specific task, not a sculpture, painting, or fine art print.

On the Warp's front faceplate, you will find an illuminated on/off button and three small LEDs that only light up if the amplifier has an operational issue. The LSA Warp 1 has provisions for both balanced XLR/TRS and unbalanced RCA inputs. The rear panel has all the inputs spaced apart, so even a cable with the most hose-like-diameter hardware should fit. A pair of five-way speaker-cable binding posts, a small on/off switch, the IEC power-cable input connection, and a "reset" button (that I never had to use) complete the rear-panel geography.

Like most basic power amplifiers, the Warp 1's exterior has no adjustments, but inside the chassis users have several choices for overall gain. The Texas Instruments OPA1656 operational amplifier's buffer has a DIP switch, which can be set at 0dB, 6dB, 14dB, and 20dB. The TPA3255 amp has

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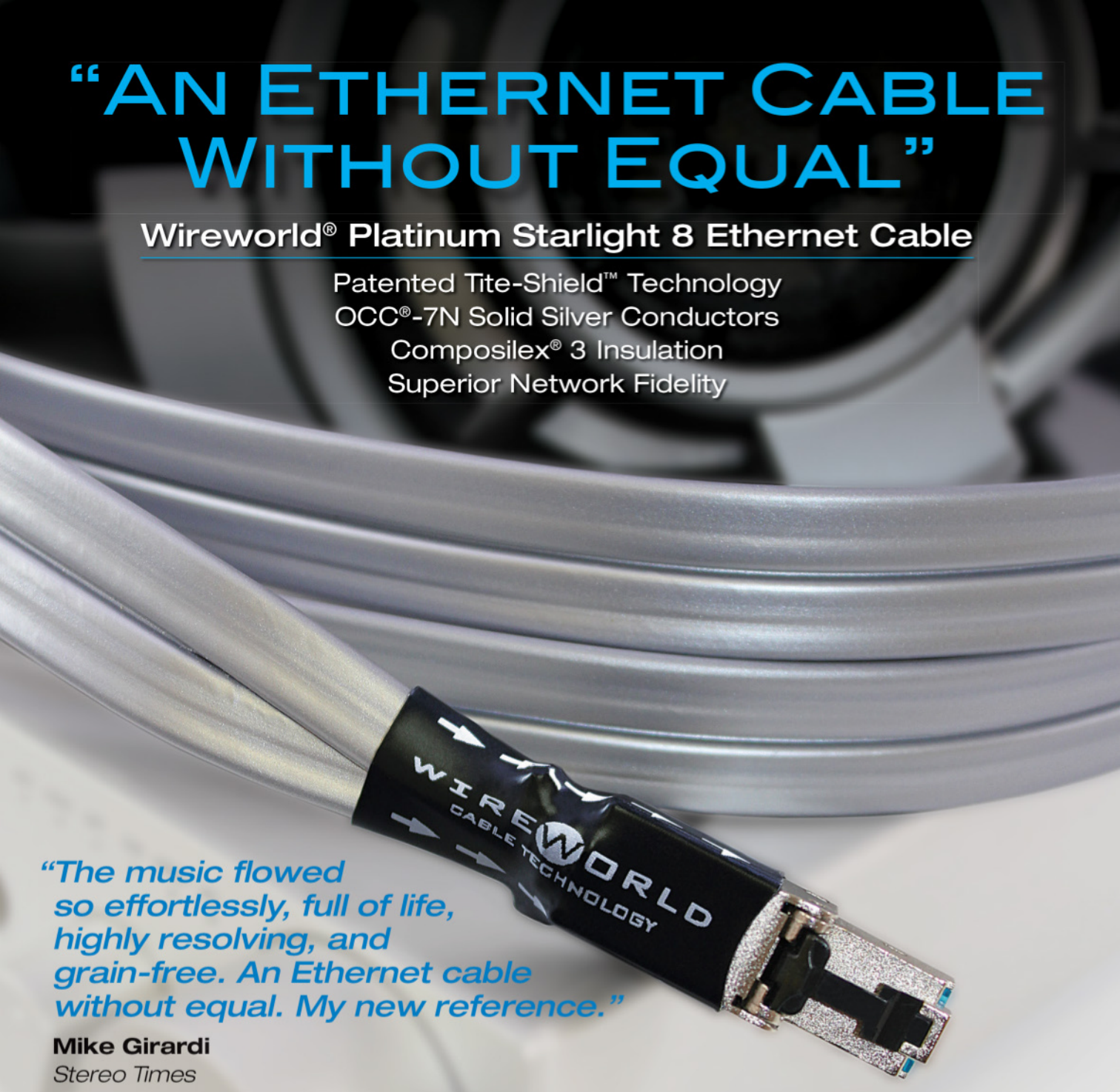


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an intrinsic 22dB of gain, so the setting from the factory is 6dB for an overall 28dB gain. You also have the option of lowering the gain to only 22dB or raising it to 36dB! That should allow for a much wider range of input source levels and or speaker sensitivities. In my nearfield setup I found that I needed to lower the gain to 22dB, not due to noise but to allow my preamp or DAC volume controls to operate in their optimal regions.

### Sound

During my many years of attending audio shows and visiting dealers and manufacturers, all too often I've entered a listening room and the first thing I heard was hum coming from somewhere in the system. For many audiophile's systems, especially those that employ older tube electronics, hum or noise is a constant companion with the music. It is inevitable that signal will arrive with some noise, but the critical issue for me is whether that noise is audible and takes away from the musical experience. My two primary listening rooms both have a steady-state background noise levels of approximately 35dB, which means if there is any noise generated by the system, I will hear it. With its 120dB signal-to-noise specification (120dB at 57Vpp [50WRMS into 8 ohms] to be exact), the Warp 1 ranks as one of the quietest power amplifiers I've used in my systems. I can place my ear less than two inches away from the drivers of a pair of 93dB efficient Omega prototype single-driver loudspeakers and hear only the very faintest hiss. The same held true when I tethered the Warp 1 to a pair of Spatial X-2s—only the slightest hiss (you must strain to hear it) let me know whether the thing was on. Falcon and Sound Artist LS3/5A monitors were also virtually silent.

For any audiophile who has a passion for highly efficient loudspeakers, the LSA Warp 1 offers an alternative to flea-watt or single-ended-tube power amplifiers. Not only will you find the Warp 1 to be quieter than many power amplifiers, but its more flexible gain options will make it fit into a wider range of systems with varying gain requirements. Also, the Warp 1 generates far less heat than any tube or Class A solid-state amplifier, which makes it an ideal option for summer listening, when climate control can become problematic.

So how does it sound? To my ears, the Warp 1 is almost a straight wire with gain, meaning it displays almost nothing that I would characterize as "personality." If you need an amplifier that "warms up" your system, the Warp 1 will not fill the bill. Unlike the Class A solid-state amps in my possession (a Nelson Pass design-based Chinese A-30 and a Pass 150.8), the Warp 1 does not add additional "grunt" or warmth to the lower midrange and upper bass. This doesn't mean the Warp 1 is cold or sterile sounding. Even on aggressive or marginally passable recordings such as "Teenage Kicks" by the Undertones from the *Teenage Kicks* EP, the result was engaging and listenable. Sure, the electric guitars peaking around 3.5kHz can sound nasty, but through the Warp 1 the sound was still quite tolerable without any augmented electronic zazz or additional hash. Still, compared to the Class A amplifiers, the Warp 1 was simply not as warm or lush and did not have their seductively mellifluous midrange.

I have a friend who regularly visits for a listening session, this time with the Warp 1 connected to a pair of Omega desktop prototypes (This design was going to be released, but a change in business plans postponed the Omega's introduction, which is a shame, because it is a wonderful nearfield monitor, especially when paired with the Velodyne DD10+ and Sound Anchor FSTT-12 desktop stands [$350]). My friend owns a classic Spectral system (among a whole bunch of other stuff). After several minutes of listening, his first comment was: "This sounds as fast as my Spectral!" He

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played some challenging tracks, including "Naked" by Finneas, where he commented on the speed of the percussion's snap. But unlike the Spectral gear I've heard in several different systems, which can occasionally sound hyper-detailed to the point of sterility, the Warp 1 manages to avoid that particular sonic characteristic. While the sound is well detailed and noticeably fast, it is more forgiving than a hyper-detailed power amplifier.

When a reviewer uses the term "more forgiving," the readers' assumption could be that it is also less revealing. The Warp 1 coupled to my reference loudspeakers, which currently include the forementioned Omega, Spatial, Audience 1+1 V4, and two LS3/5A versions, provided remarkably detailed insights into any recording. The Audience, Omega, and Spatial midrange/tweeter sections have no crossover circuits in front of them; they are all a direct connection from amplifier to speaker driver, so there is nothing to slow or alter the signal between the amplifier and the drivers themselves. This resulted in extremely accurate imaging specificity and three-dimensionality. The backwall reflections of University of Colorado's Macky Auditorium on my own live concert recordings were clearly audible and precisely placed, as were the players' positions on stage. The layering and depth cues were also well preserved, so on my recordings of Brahms Requiem the chorus was clearly behind the orchestra.

I used to own the Benchmark AHB2 power amplifier. While I no longer have it in my possession, I did log many hours of listening time with it in my systems. Harmonically and dynamically, the two power amplifiers are similar. The ABH2 was also equally quiet in terms of base-level noise, but it was not quite as revealing of subtle low-level details, nor was it as "fast" sounding as the Warp 1. While its soundstaging on the front two thirds was identical, the AHB2 truncated and homogenized the back ⅓ of the soundstage and did not delineate the space as well as the Warp 1. I also felt it was just easier to listen into the mix with the Warp 1. With the Benchmark I had to listen harder to hear all the subtle inner details.

Finding just the right amplifier to mate with an LS3/5A loudspeaker design can be challenging. Many audiophiles try tube-based power amplifiers, so they can luxuriate in the LS3/5A's seductive midrange. But they find they must suffer through the downside of constricted dynamics, poorly controlled bass, and rolled-off upper frequencies. Coupling an LS3/5A to the Warp 1 proved to be an excellent compromise. While the midrange was a bit less liquid, the rest of the frequency range, especially the lower midrange and upper bass, were much more controlled, the treble range was more linear, and the dynamics were less constricted. Coupled to the Warp 1, the Falcon LS3/5A Gold

Badge loudspeakers' sonic presentation was more controlled and sounded more like the reference monitor it was intended to be.

Due in large part to its high damping factor (greater than 300), the Warp 1's ability to produce well controlled bass was impressive. Especially on the LS3/5A loudspeakers, the Warp 1 delivered clean tight bass. Although I use subwoofers in all my systems, I have my systems set up so that the left and right speakers do not have any bass rolloff from a crossover but are instead allowed to roll off naturally. The Warp 1's bass response made it easier to blend in a subwoofer and produce a more convincing result, since the upper bass emanating from the loudspeakers was more controlled with less bloom.

Okay, no audio device is perfectly neutral, but many, including the Warp 1, can have such small amounts of harmonic coloration that they are essentially neutral. Any variations from neutrality that are heard are a result of other factors, such as the room or the transducers themselves. So, while I did not find the Warp 1 did anything to remedy any issues or improve the harmonic balance of any of the systems where it was employed, it also did not reduce fidelity in any way that I could discern.

**Summary**

At the opening of this review, I posed the question as to whether the LSA Warp 1 Class D amplifier could replace a solid-state Class A power amplifier. My conclusion is if you use a Class A amplifier partially because of its effect on the harmonic balance of your system, then no, the Warp 1 will not be an interchangeable substitute, because it has a different and, to my ear, more neutral, slightly less euphonic harmonic balance than a traditional Pass Class A design. But if you've ever wanted to hear what your system would sound like with an exceedingly noise-free power amplifier that produces a remarkably even-handed harmonic balance, then yes, the Warp 1 would be a viable power amplifier option.

Given its rather modest price of $1495, you might be tempted to write off the Warp 1 as just another me-too, mid-fi Class D power amplifier. That would be a mistake. I have, over the years, listened to plenty of Class D power amplifiers…so far, the Warp 1 is the best-sounding one I've reviewed. If you have loudspeakers that are at least reasonably efficient (or better), and you have no need to warm up their sonic personality, the Warp 1 power amplifier could be an excellent and exceedingly rational choice as your next reference power amplifier. **tas**

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# Shunyata Research Sigma v2 Interconnects and Loudspeaker Cables

## Immediacy

Kirk Midtskog

**Shunyata Research is known mostly for its power** cords and power conditioners (or "power *distributors*," as the company prefers to call them). The firm started out as a power-products manufacturer in the late 90s, so it is entirely understandable that "power gear" is the primary subject most audio folk have filed under "Shunyata" in their mental catalog entry. I hope this review helps to expand those entries to include the company's *signal* cables as more than mere "also makes." In my opinion, to pass over Shunyata's signal cables is to miss out on some excellent products.

### Background

I reviewed the original Sigma cables in 2018 and have been using them as my references ever since. The current Sigma v2 represents a significant performance advancement over the originals, much more of an advancement than the simple "v2" designation might lead you to assume. The subject of this review is the Sigma v2 interconnects ($4000/one-meter RCA) and Sigma v2 speaker cables ($9950/two-meters).

### Listening

If I were to distill my overall impression of Sigma v2 into a word, it would be *immediate*. By this, I mean the cables help my system deliver a listening experience of directness and responsiveness. The music has a straightforward liveliness and sounds less electronically processed. Indeed, my stereo's sound quality has reached a level that I thought would only be possible in a much more expensive system, with the sort of top-of-the line gear one hears at trade shows or in dedicated rooms in a well-heeled audiophile's home. While my setup is not exactly a starter kit, it certainly would not be characterized as "upper level" by most audiophiles. (Please see the Associated Equipment section.) And yet, I hear the kind of continuousness, dynamics, low-level detail, and tonal complexity that I normally expect from super-systems. Some of the sonic smearing that very good electronics ameliorate can also be cleared up by cables, and the Sigma v2 offerings are a case in point. If you already have a Goldilocks set of electronics and speakers but want to explore ways to wring more performance from them, consider some new cables before you buy new equipment and include Sigma v2 on your

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## Specs & Pricing

**Pricing:** Interconnect, RCA $4000/1m ($80 per additional 0.25m), XLR $4500/1.0m ($100 per additional 0.25m); speaker cable, spade or banana $9950/2.0m ($420 per additional 0.25m)

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**Linestages:** Ayre K-1xe, Hegel P30
**Integrated amplifier:** Hegel H390
**Power amplifiers:** Gamut M250i, Hegel H30
**Speakers:** YG Acoustics Sonja 2.2, Dynaudio Confidence C1 Signature
**Cables:** Shunyata Sigma v1 and v2 signal cables, Shunyata Sigma USB, Shunyata Alpha S/PDIF and AES/EBU, Shunyata Sigma v2 NR, Omega XC and QR power cords
**A/C Power:** Two 20-amp dedicated lines, Shunyata SR-Z1 receptacles, Shunyata Everest 8000 and Typhon power conditioners
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short list, even if you can spring for more expensive wires.

That immediacy I mentioned comes across as the ability of the system to closely track quick and subtle changes in a way that is much closer to how you hear them in real life. The absence of fuzziness on dynamic sequences allows hard transients, in particular, to emerge more directly, more intact as they unfold moment to moment. Much of what I used to consider "electronic noise" I am beginning to think has a lot to do with the improper timing of music's constituent parts. I don't understand, at a technical level, the cause of what could be referred to as this "timing smear," but I can hear it when it happens and, more easily, when it is greatly reduced. And I believe others can, too. In a parallel sense, the quote attributed to Supreme Court Justice Potter Stewart about pornography ("[I can't define it], but I know it when I see it.") applies to what I attribute to "timing disruption" (i.e., I can't define it but I can hear it when it is meaningfully reduced). This "temporal confusion" can be more readily heard on upper-frequency hard transients and on instruments with unusual harmonic characteristics, like cymbals and saxophones when they are played with some oomph. There is a slight blurring of the sequence of dynamic events on the loud transients (cymbal crashes) and an irritating hardening on loud saxophones. Clarinets, flutes, and violins don't make me unconsciously cringe when they are played loudly in the same way that cymbals and saxophones do. Has anyone else noticed how many sax players' volume levels at concerts and on some recordings are set too high for the instrument's sonic characteristics? It can be painful. (I have nothing against sax players. I admire all accomplished musicians.) Systems that more closely track the timing of these sounds don't add their own layer of "confusion," and so they sound less harsh. [*It's worth noting that the saxophone has the most complex harmonic structure of any instrument. —RH*]

Our auditory systems are very sensitive to minute differences in the timing of sounds. (This is probably because we need to know the location of certain sounds so that we can flee or pursue things, depending on the situation.) The very small differences in the arrival of the sound waves on the fairly small contours of our ears (and the distance between our ears) cause our auditory system to convert those differences into a probable sound-source location. (I suspect that accurate timing in audio is actually as important as flat frequency response—possibly more so—provided frequency response is not grossly distorted, of course.) I might be misguided, here, but I think Shunyata is addressing the temporal domain as vigorously as it is other key areas, such as frequency response, noise-reduction, and clean signal and power transmission, etc. What I hear from the Sigma v2 is a clear, revealing, dynamically vibrant presentation without a hint of any part of the sound being forced or hyped up. Music just sounds more real and more alive. More *immediate*.

The Sigma v2's tonal balance is neutral, as far as I can tell in the context of my system. The interconnect sounds a bit fuller in the bass than the speaker cable, but that does not mean the speaker cable is thin or zippy in anyway. Frequency extension is very wide. Bass is particularly robust. In my earlier review of the v1, I recommended the speaker cable—mostly because of its HARP technology—over the interconnects, if someone could only acquire either one or the other (because of budget constraints, for example). I no longer believe the speaker-cable advantage applies. Shunyata has advanced the v2 interconnects' performance to a level that closely matches that of the v2 speaker cable.

Sigma v2 helps my system's soundscape expand in all three dimensions, especially depth, which is the trickiest of the three—especially when using all solid-state amplification, as I do. Soundstage width was already excellent with the v1, but the v2 extends it out even more. Height also extends a bit higher. But the depth rendering of v2 is really the most rewarding difference. To use a visual analogy, going to Sigma v2 is akin to peering into a tide pool after it has been exposed at low tide for some time, and the water has mostly drained out or evaporated. The 3D contours of the pool's bowl and its contents of starfish, sea anemones, and other features are more readily apparent. When filled with water, you can see the starfish

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Allan Moulton reviews the Alumine Three, The Absolute Sound, Issue 304

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and anemones in the pool, but their contours usually appear to be rather flat and not distinctly full, 3-D shapes. The Sigma v2 allows my system to render images and soundscape depth with greater overall verisimilitude, more like the pool at low tide. Mind you, the v1 was already a very good imaging cable. Only in direct comparison to the v2 would I say the v1 is rather like a tide pool with a quarter of the water still remaining at the bottom.

It almost goes without saying that cables which can respond very well to subtle timing phenomena and recreate believable soundscapes and convey compelling musical information would likely also have very good resolution of fine details. This is, indeed, the case with Sigma v2. I could have just summarized this entire review with something like, "The Sigma v2 signal cables are masters of resolution. No tonal balance problems. Great dynamics and imaging. The end." (Some folks may have preferred that!) Joking aside, the level of resolution of detail here is astonishing. I heard individual voices more distinctly in the chorus, as well as more air and hall space, in Ariel Ramirez's *Misa Criolla* [Philips]. I heard better defined textures and low-level effects in the piano and electronic background tracks of Billie Eilish's "Listen Before I Go" on *When We All Fall Asleep, Where Do We Go?* [Darkroom/Interscope]. Both singers' voices (José Carreras and Billie Eilish O'Connell) were resolved so well that I could more easily "understand" how they were singing...using their mouths, their breath control, etc. The Sigma v2 allows my system to reveal more of the music not by skewing its frequency response to enhance detail, but by lowering the interfering noise and making dynamic behavior sound more lifelike. The result is a more musically interesting, revealing, exciting and, simultaneously, calmer listening experience.

## Conclusion

Shunyata has really improved its signal cables with the new v2. The performance advances in both the Sigma v2 interconnect and speaker cable over the already-very-good v1 are substantial, especially in areas such as overall resolution, dynamic agility, and soundstaging and imaging. The sonic improvements wrought by the Sigma v2 cables in my system are closer to what one would expect from a major electronics upgrade, rather than from new cables alone.

Building upon the original Sigma's technologies and construction, Caelin Gabriel and his team at Shunyata have brought to market some truly fine signal cables that, while fairly expensive, are not priced anywhere near the upper end of the market. I highly recommend Sigma v2 cables, even if you can afford the more expensive stuff.

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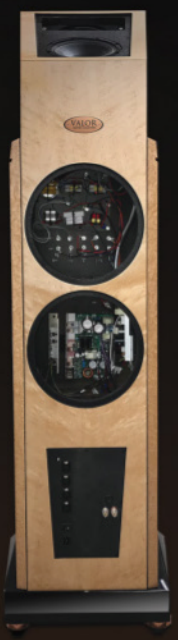

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# Technology

Shunyata's *raison d'être* and subsequent success would not be possible without its founder and designer Caelin Gabriel. A scientist by education, he worked for the NSA in digital signal acquisition and encoding, where he helped develop methods that could detect and resolve previously unintelligible transmission signals to usable levels. Carrying much of this approach to Shunyata, Gabriel uses rigorous research methods to develop technologies that reduce phenomena that adulterate signal integrity in audio gear.

All of the features from the earlier Sigma v1 are carried over to v2, with some updates integrated into the mix. I refer readers to my original Sigma review in 2018 for a more detailed discussion of the underlying technology. What follows in the next four paragraphs is a summary of the baseline Sigma design elements from that earlier review, with some new information folded in to account for the v2 features.

Shunyata uses what it calls *ArNi*ª wires, the basis of which is Ohno Continuous Cast (OCC) single-crystal, OFE101-grade copper (the purest form of certified copper available). While plenty of other cable makers use OCC conductors, Shunyata's cables are formed to function as a virtual hollow tube (called VTX) which reportedly reduces distorting eddy currents, randomly generated within a typical conductor's interior as the signal travels down its exterior. New to v2, the speaker cable uses a pure-silver center conductor surrounded by a pure-copper "concentric ring" (called VTX-Ag), whereas Sigma v1 used copper throughout. The use of silver in combination with copper is artfully done here. The increased sense of "speed" associated with silver is evident, but it is not accompanied by some of silver's downsides—like tipped-up, thin, or aggressive sound.

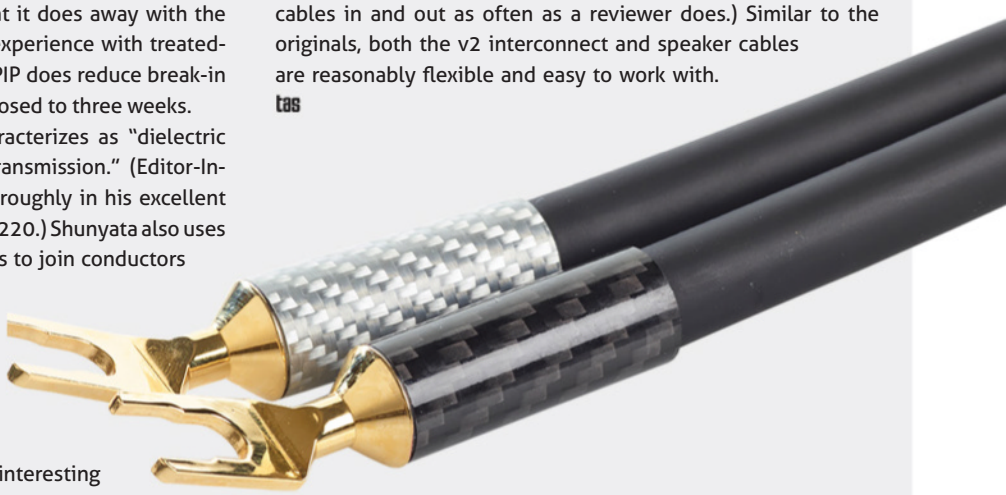
All Shunyata cables are treated with something called the Kinetic Phase Inversion Process (KPIP), which essentially does away with the need to determine a cable's correct signal direction and to provide sufficient burn-in before its function is optimized and remains stable. Shunyata actually doesn't say much about how KPIP works, other than to claim that it does away with the need for cryogenic treatment. My own experience with treated-versus-untreated cables confirms that KPIP does reduce break-in time significantly, about two days as opposed to three weeks.

*Tron*ª addresses what Shunyata characterizes as "dielectric absorption and re-radiation in signal transmission." (Editor-In-Chief Robert Harley described *Tron*ª thoroughly in his excellent review of Anaconda signal cables in Issue 220.) Shunyata also uses sonic-welding and cold-welding methods to join conductors and connectors, instead of traditional soldering, brazing, or crimping. Sonic-welding reportedly enhances transient response and mechanical integrity, while mitigating some of the flaws of the other methods.

Sigma v2 includes two more interesting technologies—TAP (Transverse Axial Polarizer) in the interconnect and HARP (not an initialism) in the speaker cable. Sigma v2 now has two TAP modules instead of one in v1. TAP reportedly reduces electromagnetic polarization distortion by blocking longitudinally polarized waves while allowing transverse waves to pass unimpeded. This apparently reduces sonic glare caused by longitudinal electromagnetic waves interfering with the original signal. HARP apparently does not change signal transfer function (capacitance, inductance, or resistance). Shunyata is guarded about how it works. I can tell you, though, that HARP is highly effective in improving the overall performance of the applied system based on A/B/A demos I've heard at the Shunyata facility in Poulsbo, Washington. HARP enhanced the system's performance in every regard—tonal purity, image focus, dynamic precision, soundstaging, and resolution of details and timbre. Sigma v2 now has two HARP modules instead of one in v1.

In a general sense, the build-quality of Sigma v2 has improved. The HARP modules are now more elegantly integrated into cylindrical structures at either end of the speaker cable, so they look like part of the breakout section from the main cable into the hot/neutral legs for the amp or speaker terminations. The older v1 HARP modules were larger, mostly oblong-shaped boxes that resembled a "network case," such as those on cables made by Transparent or MIT, although Shunyata cables don't contain capacitors, inductors, or resistors that modify the frequency response or transfer function. The v2 spade and XLR connectors appear to be of better quality, and the speaker termination "shoes" are more robust and look nicer. The v2 interconnect TAP modules, which resemble small carbon-fiber cylinders, are also a bit smaller in diameter, and therefore a little more subtle. Each interconnect has only one small red or black dot at the ends of each XLR barrel (I assume this is also the case on the RCAs), so I sometimes found it a bit difficult to tell whether I was handling the right of left channel cable. (This would probably not pose a problem to a normal music lover, who does not need to switch cables in and out as often as a reviewer does.) Similar to the originals, both the v2 interconnect and speaker cables are reasonably flexible and easy to work with.

tas



# VTL S-200 Signature Stereo Amplifier

## Musical Expressiveness

Wayne Garcia

**My original review of VTL's S-200 Signature** stereo amplifier appeared back in early 2019 (Issue 290), and the amp's been in my reference system ever since. In that article I spent some time discussing how the amplifier's two easily switchable (via a front panel button) playback modes—tetrode and triode—differed sonically.

Although the triode mode has plenty to recommend it—an impressively deep soundstage, as well as a seductively warm tonal beauty, which can soften and indeed make far more palatable some less than great recordings—I decided to stick with the tetrode setting for what I ultimately perceived as its greater tonal accuracy, wider dynamics and frequency range, more robust bottom end, and livelier musical energy.

Moreover, my power-sucking Maggie 1.7s were far happier with the tetrode mode's 200Wpc output versus half-power triode operation.

I happily lived with the S-200 in this configuration until—in what turned out to be a happy coincidence—VTL's Luke Manley visited one day to install the company's 6.5 Series II phono preamp, and we encountered a rare failure with one of the S-200's 6550 output tubes. Neither Luke nor I had a replacement tube on hand, but as luck would have it, Luke did have a full complement of eight Russian-made Genalex Gold Lion KT88s stashed in his car.

**Because the S-200 has an auto-bias circuit and swapping out tubes is easy via screw-off side hatches, we were up and running in no time.**

"Let's try them," Luke said, "you may even prefer them to the 6550s, because the Europeans and Japanese love the KT88s for their naturalness in the midrange."

Intrigued by Luke's words, I thought to myself, "Why haven't we tried this before?"

Because the S-200 has an auto-bias circuit and swapping out tubes is easy via screw-off side hatches, we were up and running in no time.

Luke's prediction about my possible reaction proved accurate.

From the first bars of Prokofiev's Violin Sonata No. 1 (the glorious MusicMasters recording featuring Nadja Salerno-Sonnenberg on violin and Sandra Rivers on piano), it was evident that the S-200 had, to these ears, hit another level of musical expressiveness and sonic refinement. From the piano's brooding, half-awake opening statement to the violin's tentative, scratchy reply to the off-kilter waltz-like section and on, the instruments simply sounded more true-to-life, dynamics gained nuance, the air of the recorded space as well as around each instrument bloomed more, and the presentation was notably more immersive.

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### Specs & Pricing

**Power output:** 200Wpc into 5 ohms (tetrode); 100Wpc into 5 ohms (triode)
**Number and type of inputs**: 1 pair single-ended RCA; 1 pair balanced XLR
**Tube complement:** 8 x 6550 or KT-88, 2 x 12AT7, 2 x 12BH7
**Dimensions:** 18.5" x 9" x 18"
**Weight**: 105 lbs.
**Price:** $12,500

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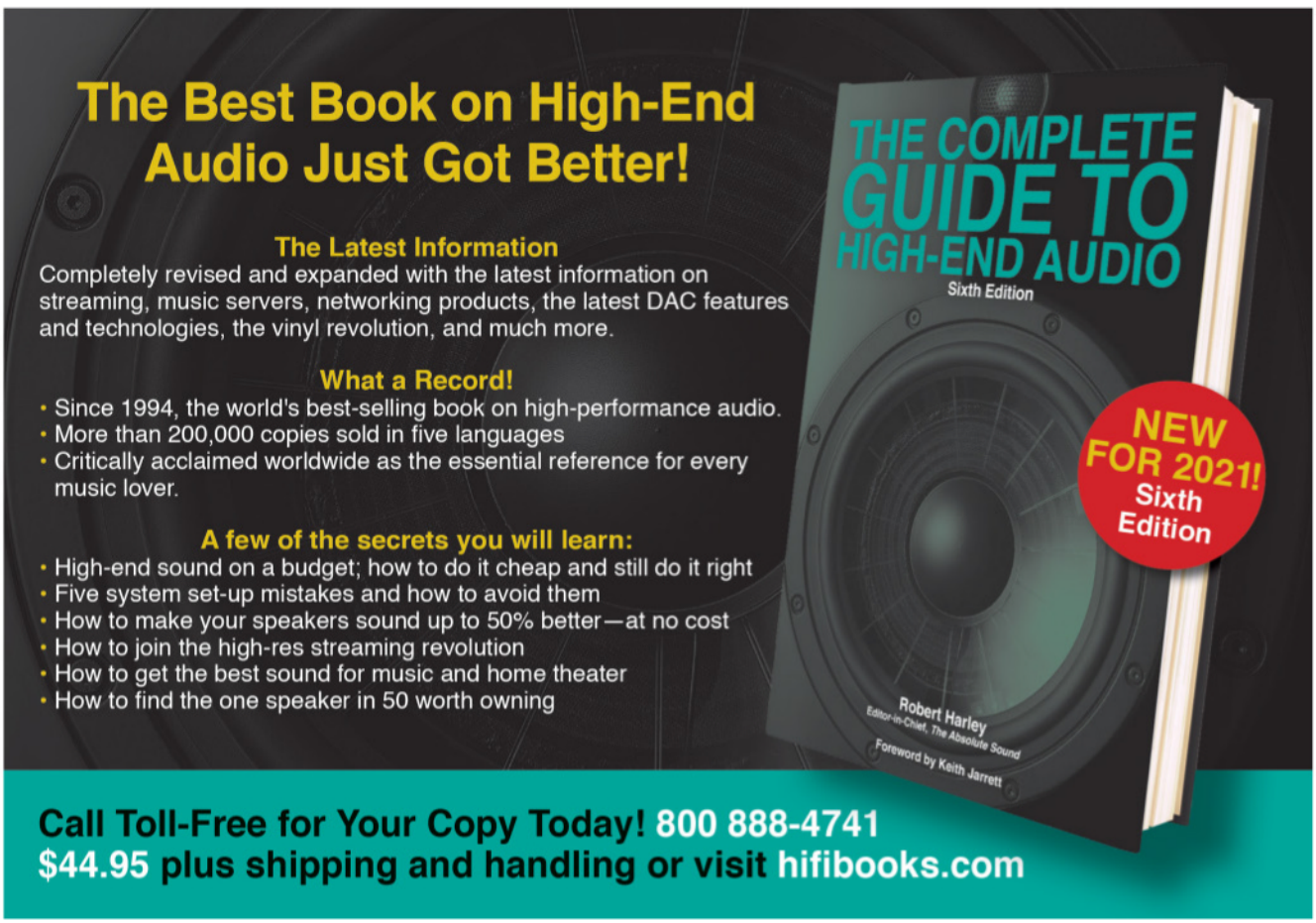
Bass response, too, if not perhaps ultimately as punchy, was more nuanced both tonally and texturally with the KT88s on, say, Paul Chambers' upright in Analogue Productions' stunning UHQR pressing of *Kind of Blue*, or on Roy Haynes' rollicking drum break from the same company's 45rpm-set of Monk's *Thelonious in Action*, where one simply hears/feels more of the skin, sticks, and volume of individual drum parts.

Rather than unspool a further list of musical illustrations, let me state that I can't think of a record—from a Beethoven piano sonata to a Mahler symphony to the vocal genius of Cécile McLorin Salvant—that I didn't prefer with the KT88 tube set.

That said, there's a slight price to pay for this extra musicality. Although the KT88s are capable of cranking more volume than the 6550s in triode mode, they don't quite match that tube complement's tetrode muscle. So, one will, on occasion—especially if in a mood to crank some heavier rock—cause a tube to draw excess current, which activates the fault-sensing system to protect the amplifier by shutting down. A deck-mounted LED next to each of the output tubes indicates which one is having a problem, and rebooting takes about a minute. Now and then a tube may completely fail, requiring replacement, but that's rare and, in any case, is something all tubes are prone to.

Regardless of which tube set or mode one selects, these past few years with the S-200 have only increased my appreciation for what Luke Manley and his team have accomplished here. tas

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# AudioQuest Dragon Interconnect

## Benchmark

Robert Harley

**I rarely write about cables because I rarely encounter** one that inspires me to review it. This isn't to say that cables are unimportant, only that I find other product categories more interesting. But after hearing AudioQuest's new top-of-the-line Dragon interconnect, I immediately knew that I wanted to share my impressions with you. To spill the beans in the first paragraph, the Dragon is the most significant advance in interconnect performance I've encountered in 33 years of full-time reviewing.

Although AudioQuest has been developing proprietary cable materials and techniques for 42 years, the company embarked on its new "Mythical Creatures" series of interconnects with a fresh mind. Rather than create a more advanced implementation of existing technologies, AudioQuest approached its new reference series by starting from first principles. It would call on proven technologies but not be bound by them. The result is a fascinating amalgam of fresh thinking and AudioQuest's established designs. I've broken out the unique technologies of these interconnects in the sidebar.

Dragon is the top model in the three-product Mythical Creatures series. It is priced at $9500 for a meter pair terminated with RCA plugs, or $11,900 for balanced connection with XLR connectors. FireBird is $5500/$6900-per-meter pair (RCA/XLR), and ThunderBird comes in at $2900/$3900 (RCA/XLR). All three share the same design approach but differ in the level of execution. As a tremendous bonus, the interconnects are extremely flexible and easy to install and swap.

### Listening

AudioQuest initially sent me a single one-meter run of balanced Dragon that I installed between the CH Precision P1 phonostage (with X1 power supply) and the CH Precision L10 four-chassis linestage. After replacing my existing cable with Dragon and listening to the first record, I was beyond surprised, not only at the magnitude of the improvement but also at the *way*s in which the sound was better. I had simply never heard this kind of wholesale effect from any cable. Dragon wasn't just different; it was better in every possible way. Comparing cables is often a matter of trading one set of virtues and drawbacks for a different set of virtues and drawbacks. You pick the cable that happens to have the tradeoffs that best suit your system and tastes. Dragon wasn't like that. Rather, it elevated the musical experience to an entirely new level of involvement and expression.

Some months later, I was able to replace the entire line-level signal path with Dragon, including the 37' run from the linestage behind the listening couch to the front of the room where the CH Precision M10 amplifiers are located. This run made the most significant difference in my system, and the improvements it rendered combined with the advances heard with Dragon in the phono path and from the Wadax Reference DAC to the CH Precision L10 linestage.

Although Dragon does everything you'd expect from a top-level interconnect at this price, it goes above and beyond the cliches of greater transparency, smoother textures, and a bigger soundstage. Judged simply by the traditional criteria for evaluating cables, Dragon excelled in all the audiophile parameters. But this interconnect did things I've never heard from a cable—or more precisely, Dragon allowed my system to reveal previously hidden qualities. For example, the midrange was simply luscious, liquid, and stunningly present and vivid. Vocals were completely untethered to the speakers and projected against an absolutely silent background. This had the effect of increasing the sense of presence and fostering the startling impression of the vocalist being in the room. Dragon made the midrange sound eerily like that of a full-range planar speaker, with the

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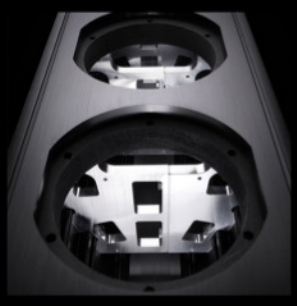

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**Digital source:** Wadax Reference DAC, Wadax Reference Server, Wadax Akasa optical interface, UpTone Audio EtherREGEN Ethernet switch
**Amplification:** CH Precision L10 Dual Monaural linestage; CH Precision M10 Dual Monaural power amplifiers
**AC Power:** Shunyata Everest 8000 conditioner, Omega and Sigma NR V2 power cords; Shunyata AC outlets, five dedicated 20A lines wired with identical length 10AWG
**Support:** Critical Mass Systems Olympus equipment racks and Olympus amplifier stands; CenterStage2 isolation, Ayra Audio RevOpods isolation
**Cables:** AudioQuest Dragon Zero and Dragon Bass loudspeaker cables
**Accessories:** The Chord Company GroundArray noise reduction
**Acoustics:** Acoustic Geometry Pro Room Pack 12, ASC 16" Round Tube Traps
**Room:** Purpose-built; Acoustic Sciences Corporation Iso-Wall System

unmistakable palpability and realism that comes so easily to full-range electrostatics and ribbons. I'm not saying that Dragon will make any box speaker sounds like a Magnepan MG30.7 or a MartinLogan CLX, only that Dragon moves the system in a sonic and musical direction that is reminiscent of the best full-range dipoles. Listen, for example, to Melody Gardot's beautiful singing on her new album *Sunset in the Blue* (Qobuz 96/24). Switching to Dragon (from an already reference-level interconnect, AudioQuest's WEL Signature) heightened the sensation of her singing directly *to me*. Incidentally, I heard this album on Magnepan MG30.7s the same week I installed Dragon in my system. Dragon has a vividness that is startling, but in an entirely musical rather than a hi-fi-hype way.

Another aspect of Dragon that is unique is that it conveys more richly saturated tone color. From the lowest bass to the top treble, the sound simply had denser timbre, greater body, and better tonal weight. Timbres not only had more color; they also had a greater sense that there was energy and substance behind them. I don't mean dynamically (although Dragon is superb in this regard), but rather in the impression of solidity and tangibility of instrumental textures. Consequently, images took a step toward the way we hear instruments in life, rich in vivid color and body and less like an ethereal simulacrum. It was as though Dragon stripped away a very slight grey patina overlaying timbres, allowing their full color to bloom. This was true no matter the instrument or the register in which it was playing. From the most delicately played passages on solo violin (Hilary Hahn's *Retrospective*, direct-to-disc on Deutsche Grammophon) to the *fff* brass tuttis on *John Williams at the Movies* (Reference Recordings, 176/24 download), Dragon allowed the system to express the palpable physicality of instrumental timbres more realistically. Dragon was the antithesis of threadbare and lightweight. It made other interconnects, even great ones, sound a bit thin and bleached by comparison, like a slightly underexposed photograph. I was struck by the unique quality of this improvement, the magnitude of the difference, and the profound effect it had on musical realism and my immersion in the experience.

Dragon's density of texture was also apparent in the bass—warm, rich, and full without being plummy or thick. Textural resolution in the bottom end was superb; there was simply more detail resolved in the timbres of acoustic and electric bass, left-hand piano lines, bass clarinet, contrabassoon, and low brass, for examples. I love the sound of bass clarinet, with its dark and rich color. Dragon allowed my system to portray that instrument with greater realism—try Bob Mintzer's fabulous and extended bass clarinet solo on the 13-minute piece "El Faqir" from guitarist Steve Khan's *Borrowed Time*.

This quality extended beyond timbre to the way Dragon allowed the system to portray dynamics, both in the startling suddenness of transient impact, but also in the way an instrument's dynamic envelope expands into the air around it. The bloom around an instrumental outline, static during held notes, modulates with the instrument's dynamics, a quality Jonathan Valin has called "action." It's the bloom around an instrumental outline expanding outward with the dynamic envelope of the note. With Dragon, this "action" seemed to have more force and power behind it, and more tangibility, further adding to the lifelike rendering. Dragon also better revealed the space between instruments in an ensemble. A vivid example is *The Zappa Album*, a performance of Zappa compositions performed by the Finnish new-music group Ensemble Ambrosius on Baroque instruments. I know it sounds weird, but it works, presenting these brilliant compositions in an entirely new light. Dragon more realistically conveyed the unique timbres of the period instruments as well as the space in which they were played. Indeed, Dragon opened new vistas in soundstage depth and transparency. The presentation was more three-dimensional, with superb resolution of the size and character of

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The Absolute Sound, Robert Harley, December 2021

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## Design

**THE FIRST THING YOU'LL NOTICE** about the balanced version of Dragon is that the two signal phases and ground are separated and carried on conductors in separate jackets. That means there are three cables between the XLR connectors. This configuration was necessary to prevent Dragon from becoming as stiff as a frozen garden hose. Fortunately, Dragon is the most flexible and easy-to-work-with interconnect I've used.

A key design element in Dragon and the other two interconnects in the Mythical Creatures series is what AudioQuest calls "ZERO-Tech." This is a construction method that, according to AudioQuest, virtually eliminates the distortion that comes from mismatched impedances between the cable and its associated component. The result is, reportedly, a higher degree of clarity, consistent at all signal levels and frequencies.

Dissipating noise was an important design goal because the environment is flooded with RF noise, and as we increasingly learn, this noise is a significant pollutant of an audio signal. (See my essay "Noise, the Final Frontier" in Issue 323.) AudioQuest has long employed noise-reducing techniques, but the Mythical Creatures line introduces new methods for combatting noise. For example, within the cable is a carbon and graphene resistive mesh network attached to silver-plated copper shield drains (in FireBird and ThunderBird) and to solid Perfect-Surface silver drains (in Dragon). Noise is thereby shunted out of the signal conductors to the shield drains.

Mythical Creatures incorporates AudioQuest's long-running and patented Dielectric-Bias System. Here's how it works. A small housing on one end of the cable holds an array of small batteries that together generate 72V. A wire connected to a 72V battery's positive terminal runs internally down the cable's length and is not connected to the cable or to the battery's negative terminal. The battery's negative terminal is connected to a shield around the conductors. Because there is no path for current between the battery's positive and negative terminals, the battery experiences no current drain and will last for years. Keep in mind that the battery system is completely outside the audio signal path and doesn't interact with the audio signal in any way. The batteries' DC voltage polarizes the dielectric to minimize the dielectric's deleterious effect on the signal and, also, to lower the noise. New in the Mythical Creatures line, the balanced XLR-terminated interconnects are fitted with larger battery housings that hold two independent DC sources and two DBS systems, one for each of the balanced signal conductors.

The conductors are AudioQuest's top PSS (Perfect-Surface Silver) metal. Metal drawn into wire isn't perfectly smooth and continuous, but rather is composed of "grains." Despite casual appearances, any strand or conductor is a long series of imperfect grain junctions. As a result of the metal being drawn through a die, this relationship between grains exhibits a chevron structure. At their surface, the grains manifest as an asymmetrical fish-scale or roof-shingle structure that affects induced RF-noise conductivity, causing the performance of the attached electronics to be significantly sensitive to conductor directionality, according to AudioQuest.

The dielectric is made from Fluorinated Ethylene Propylene (FEP), a member of a chemical family that, when manufactured by Dupont, is sold under the Teflon trademark. The material is formed into air tubes, increasing the distance between the conductor and its insulation to minimize the dielectric's effect on the signal. Finally, the XLR connectors are custom made from high-purity red copper that is plated with pure silver. For more technical detail, see the white paper on AudioQuest's website.

the acoustic surrounding the images, further adding to the overall organic and lifelike sound.

Last, and certainly not least, Dragon's treble was simply stunning in its combination of openness and resolution on one hand, and smoothness and refinement on the other. One of my "go-to" evaluation tracks is "Ain't Misbehavin'" performed by Bob James on the trio album *Espresso* (one of the best-sounding piano trio recordings I know of). On the intricate and subtle ride-cymbal work at the beginning of the bass solo, I heard a newfound delicacy, richness of detail, and treble purity. The treble was exquisitely detailed and finely filigreed, with no hint of hardness. The combination of high resolution and textural smoothness was extremely compelling, and greatly contributed to the musical involvement and overall ease of the presentation. If you audition Dragon, listen to how sibilance is less intrusive on an album like Diana Krall's *Turn Up the Quiet*. The sibilance is still there, but it doesn't have objectionable "ssss" component. This very fine resolution of treble detail was also apparent on "Beckus the Dandipratt" from *The Arnold Overtures* (Reference Recordings 176/24), particularly during a passage in which an unaccompanied snare drum is played at a barely perceptible volume. After installing Dragon, I could more clearly hear the inner detail and texture of the drum despite the vanishingly low signal level.

### Conclusion

AudioQuest's new Dragon is not only the most transparent and revealing interconnect I've heard, it's also the most musically rewarding. The things that it does so well are all aligned toward fostering a powerful feeling of connection to the music and the expression of the musicians rather than just filling in boxes on an audiophile checklist.

It's important to note that the qualities I've described here are not intrinsic to Dragon. Rather, they are qualities of my system that Dragon is simply revealing better than any other interconnect I've heard. There must be some distortion mechanism in other cables that Dragon somehow avoids, allowing the true quality of the rest of my system to be revealed.

Dragon is expensive, but in the context of a reference-quality system, it is indispensable. tas

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# LIVING UP TO THE AUDIO DREAM

## PS AUDIO FR30 LOUDSPEAKER

ANTHONY H. CORDESMAN • PHOTOGRAPHY BY MATT WRIGHT-STEEL

I must admit to a certain amount of bias in preparing for this review. I'm one of the few reviewers who can remember visiting Harry Pearson at Sea Cliff during the earlier days of *The Absolute Sound* and hearing him demonstrate the legendary Infinity Reference Standard (IRS), which had been designed and built under the leadership of Arnie Nudell. Each IRS consisted of a massive column of woofers coupled with a six-foot-tall line array of planar-magnetic midrange and tweeter drivers (of Nudell's own design).

I'd sold high-end audio equipment when I was in college and thought I knew what a true reference speaker should sound like. In practice, the Infinity IRS made a massive contrast to my experience with the other reference speakers of the day, as well as to my personal investments in a series of then contemporary Quads, AR-3s, and Magneplanars. The IRS were anything but easy for an amplifier to drive, but they were worth the trouble. They were a revelation compared to the other reference speaker systems of that era, and one I would have loved to have been able to afford.

Time did move on, and rivals did emerge—some coming from the company founded by another voice from TAS' early days, Dave Wilson. But Arnie Nudell remained one of the great innovators in the history of the high end, and I had the opportunity to review some of Arnie's newer work when he formed a speaker company called Genesis with PS Audio co-founder Paul McGowan. I never got to review their top-of-the-line Genesis I, which sold for $70,000 back in 1995, when that was real money. However, I did get to hear the Genesis I at length, and it too became a product that I would have loved to have had the money to own.

I should be careful to note here that I've heard—and sometimes bought—a number of great speakers from other manufacturers over the years. And yet, I never forgot either the precedent set by IRS and Genesis speakers. As a result, PS Audio got my attention the moment that its CEO, Paul McGowan, who had partnered with Arnie Nudell, started talking about going back into the speaker business.

THE FINAL VERSION OF THE FR30'S DESIGN BY STUDIO 63 MIGHT NOW QUALIFY THE SPEAKER AS A SCULPTURE THAT COULD BE DISPLAYED AT THE MUSEUM OF MODERN ART.

I got even more interested as I saw various descriptions of his design mature into what we now know as the PS Audio Aspen FR30, which is the subject of this review, and particularly when I saw that its estimated price might be affordable by high-end standards. It also became clear that the final design would come in the form of one relatively compact floorstanding speaker per channel, rather than one giant midrange-to treble speaker and a second, massive, separate subwoofer with a six-foot stack of servo-driven woofers.

Equally importantly, it became clear that the final version of the FR30 was going to be far more visually attractive than some of PS Audio's earlier prototypes. Visual impact matters to me. I use my reference system to try to persuade my friends and visitors to get involved in the high end. While the final version of the FR30 is scarcely compact, a pair can easily fit into a large living room without dominating it and without alienating a non-audiophile wife, husband, or partner. In fact, as the photos in this review show, the final version of the FR30's design by Studio 63 might now qualify the speaker as a sculpture that could be displayed at the Museum of Modern Art.

At the same time, it was clear that form was still intended to be subordinate to function. Paul McGowan and Chris Brunhaver, PS Audio's lead speaker designer, described the primary goals behind their design as follows: "For a reference loudspeaker, our technical goals with the FR30 were centered around creating a system with a full-range response, large dynamic range (to try to capture the dynamics of live music without stress or strain), broad and stable imaging, and something tonally balanced and natural sounding (not fatiguing or etched)."

The final version of the FR30 is clearly designed to provide musical as well as physical beauty. The FR30 may appear to be of moderate size by high-end reference-speaker standards, but it is heavy (230 pounds) and bigger than it looks (not counting the base, it measures 10" x 60.5"

PS AUDIO FR30 REFERENCE LOUDSPEAKER

x 25.75"). Its cabinet finish may have had some 20 coats of hand-rubbed lacquer, but its main body is a solid mix of MDF, supported by MDF bracing. Its front is also formed out of sculpted, dense, rigid, and well-damped thermoset fiberglass resin, which provides integrated, high-frequency acoustic waveguides.

The FR30 is also surprisingly practical for home use. One of its design goals is to ensure that it can be mated with virtually any good stereo or mono power amplifier, although it takes at least 100 watts per channel to exploit its dynamic range (more if you want to get its full ability to reproduce even the loudest peaks). Unlike the Infinity IRS and Genesis I, the FR30 does not use servo-driven woofers or present a complex or demanding load.

The FR30's base is designed so it can move on sliders that come with the speaker. As I'll explain shortly, a true reference speaker requires a lot of experimentation to get the best placement and sonic results. I don't claim sliding a 230-pound speaker around to find that ideal location is fun, but some of my experiments with setup included the unilateral efforts of a relatively slight female friend, who has her own decided views on speaker adjustment. The base also has brass spikes with removable tips and integrated plastic feet for hard surfaces (and to aid in speaker placement).

As for the price, it did reach $28,500, but this is scarcely the pound of flesh that most competing reference speaker's now cost, and PS Audio is planning significantly less expensive smaller versions in the future.

A TRUE REFERENCE SPEAKER REQUIRES A LOT OF EXPERIMENTATION TO GET THE BEST PLACEMENT AND SONIC RESULTS.

## A SOPHISTICATED CHALLENGE TO THE STATE OF THE ART

The clean design lines of the FR30's cabinet also conceal a lot of new technology and driver capability. The speaker's exposed planar and woofer drivers may look somewhat conventional at first sight, but they are the products of a wide range of new approaches to speaker design. If you are wondering about the FR30's ability to perform so well without a separate subwoofer column, the speaker does come in two distinct parts—a large woofer cabinet at the bottom and a midrange and treble cabinet that mounts above it. These two cabinets snap together easily, and they are mounted on a metal platform that has adjustable feet that use their spikes to precisely align the speaker and the angle of radiation from their midrange and treble drivers.

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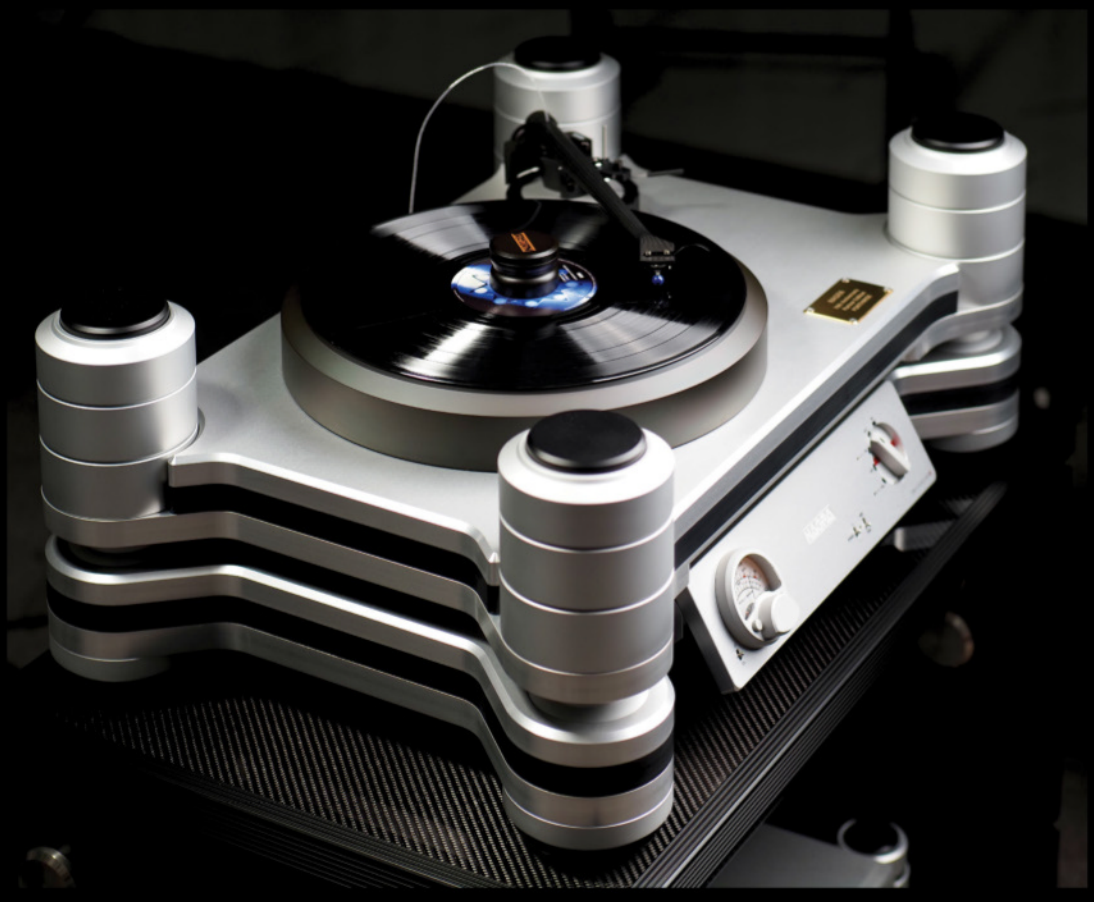

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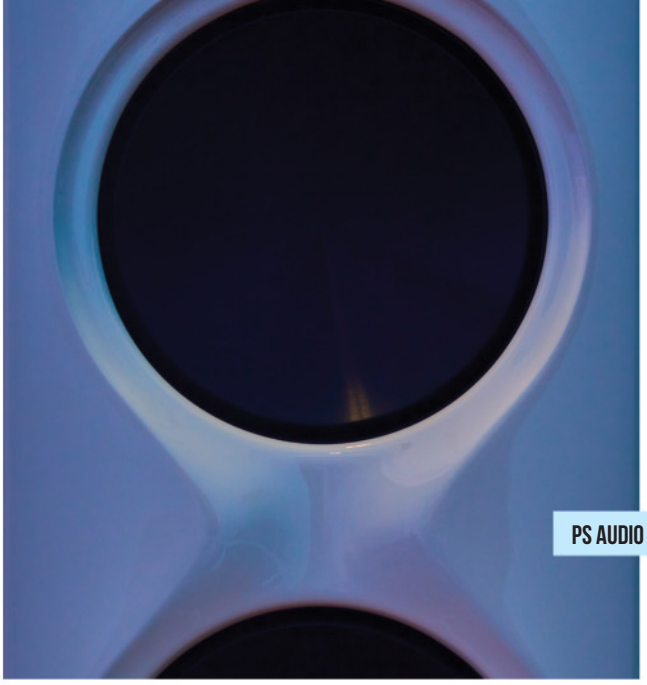

MY OWN LISTENING TESTS FOUND THAT THE FR30 DID LIVE UP TO THIS PROSE.

**PS AUDIO FR30 REFERENCE LOUDSPEAKER**

I suppose it is also worth mentioning in passing that the FR30 can be biwired and biamped, although PS Audio does not recommend this. I found no sonic reason to do it and ended up using a single power amp. It is not only easy to drive, but its technology includes an extremely flat impedance curve at all audible frequencies. This helps makes its nominal 87dB sensitivity sound surprisingly efficient and does so with far less trouble in the deep bass or the upper midrange than I've encountered in some other super-speakers. Adding a separate pair of speaker cables for the woofer and the midrange/tweeter cabinets certainly did not help the sound, and using two different types of power amps proved to be little more than an awkward way to "color" it.

I'd personally go for a higher-powered amplifier to get the best musical dynamics out of peak music passages—particularly those with organ, bass drum, bass guitar, and synthesizer. In practice, however, my listening efforts for this review make me confident you'll find that any amplifier which can deliver 100 watts per channel into the deepest bass will be enough for many users. Moreover, the ability to use amps with up to 600 watts per channel to handle the most demanding peaks has its risks. The FR30 is efficient enough so that any prolonged use of such power may do more to damage your hearing than enhance your music.

The driver technology is highly innovative and designed from scratch for the FR30. The sealed upper cabinet uses a midrange with a 10" planar-magnetic driver with Teonex diaphragm, and two 2.5" planar-magnetic Teonex tweeters. As you might expect in a speaker of this quality, the crossover uses custom film capacitors and high-quality air-core inductors. The cabinet also has a rear tweeter with its own level control, and a separate baffle-step adjustment to help tailor the response to the placement in a given listening room. These adjustments are well worth experimenting with, and their limited range of adjustment is well chosen to help in setup without risking an adjustment that will degrade the FR30's performance.

It is the planar drivers, however, that make the sound of the FR30 so exceptional. PS Audio describes these planar-magnetics as "a technology that has the speed of an electrostat with the dynamics of a cone…These ultra-low distortion drivers are equally driven with front and rear magnetic structures that offer inherent linearity through symmetrical 'push-pull' neodymium motor structures and directly driven ultra-low mass diaphragms with none of the cone or dome breakup, inductance modulation, or hysteresis distortion that plagues traditional drivers."

My own listening tests found that the FR30 did live up to this prose. I was steadily more impressed by the sound of the FR30's two planar drivers—particularly the midrange one—as I continued to listen to my own reference recordings and a wide range of streamed music, including many high-resolution recordings. I've heard an incredible range of different approaches to midrange drivers and tweeters over the years. They have involved everything from diamond-diaphragm tweeters and exotic metal cones to plasma transducers that seem better suited to sci-fi shows involving interstellar combat. By and large, I have preferred ribbons or planars, but even the best of these have audible limits.

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PS AUDIO FR30 REFERENCE LOUDSPEAKER

The planar drivers in the FR30 proved to be consistently more revealing and more musically natural with great recordings than any of the competition I've heard to date, and there may be technical reasons why this is so. In a recent article, the FR30's main designer, Chris Brunhaver, makes a point of how much progress has been made in planar design since the time of the Infinity IRS. He stresses advances in areas like target response, dispersion, and motor design. He also states that "when I look at a modern-day planar-magnetic driver compared to what was used in the old Infinity EMIMs and EMITs, we now have driver units that require less than one-tenth the power for a given output and offer far lower distortion." Ah well, *requiescet in pace*, IRS and Genesis.

THE WOOFERS MAY LOOK CONVENTIONAL FROM THE OUTSIDE, BUT THEIR TECHNICAL INNOVATION MATCHES THAT OF THE MIDRANGE AND TREBLE DRIVERS.

As for the woofer section, the woofers may look conventional from the outside, but their technical innovation matches that of the midrange and treble driver. The cabinet is remarkably well braced and is made of an extremely vibration-resistant material. This allows the FR30 to deploy a major complement of drivers in a relatively small space. The woofer section uses four 8" woofers on the front panel, and four newly designed 10" passive radiators on the two sides of the cabinet. PS Audio states that each woofer "is capable of 115dB output (in half space) for a single speaker at the rated power handling and woofer excursion, and so large transients and impact are correctly resolved without strain." It also describes the individual woofer drivers as follows: "For the low end, we crafted long-throw, high-excursion woofers with massive 12-pound motor structures that match the effortlessness and transparency of the planar-magnetic drivers. To lower distortion, we employed a unique split-magnetic gap and a double-faraday ring for low linear inductance and wide bandwidth, coupled with a symmetrical double spider. Lastly, to achieve maximum linearity and deep bass extension without the compression and distortion of ports, we designed our own high-compliance passive radiators."

At the risk of getting a bit too technical by TAS standards, Chris Brunhaver responded to some of my follow-up questions by explaining that the FR30 used such woofers because "woofers are much better than planars at moving air down low, although there can be a discontinuity between a planar midrange and cone woofer section in hybrid systems." Chris also stated that "we used a monopole (not open-baffle) design on the planar drivers to best match the directional characteristics of the woofer and give a seamless sound. The woofers

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were highly optimized for low distortion and wide bandwidth to match the resolution of the planar drivers. A split magnetic gap was used to give much more linear motor force versus excursion and to avoid a motor-force-induced compression and modulation that happens with traditional magnet structures (known as force-factor modulation). Multiple faraday rings (inside the magnet and in the magnetic gap) keep the flux field stable and lower midrange distortion, low-frequency dynamic offset, and flux modulation. Combining high excursion with symmetrical suspension reduced distortion in the deep bass. Altogether, this added a resolution and texture to the bass and low midrange that complements that of the planar drivers."

As for the passive radiators, Chris states that "the two 10" radiators per channel behave much like a bass-reflex system, which—when designed correctly—eliminates the port compression/chuffing, coloration from resonances (from midrange leakage and port pipe resonances and distortion). Like a port, the passive radiators create a cone minimum at the 24Hz tuning frequency that we use, and there is both additional sensitivity, extension, and output gained versus a sealed box, without some of the compromises of a port."

## SOUND QUALITY

Granted, any claims about progress in technology do have to be kept in a real-world perspective. Innovation is irrelevant if the result does not live up to the designer's goals and the user's expectations. In this case, the more I listened, the more the FR30 proved to be a true reference-quality speaker and the more its sonic advances did seem to clearly be a product of its claimed advances in technology. More than that, the more it made any effort on my part to compare its sound to my now distant memories of the Infinity IRS and the Genesis I totally irrelevant. It is one of the finest reference speakers now available, and certainly one that does help define the current state of the art.

Its sonic advantages became apparent almost immediately after Paul McGowan and Chris Brunhaver set up the review pair. I don't do serious listening to any component when the manufacturers are present. Accordingly, I let them do their setup, explain the product, and play their demonstrations—and learned a great deal about design and setup in the process—but I avoided any instant feedback. In this case, however, I had a bit of trouble remaining quietly neutral about some aspects of the FR30's performance from my first moments of listening onwards.

FROM THE START, HOWEVER, THE FR30'S MIDRANGE AND HIGH-FREQUENCY SOUND QUALITY WAS THE BEST I'VE HEARD FROM ANY SPEAKER TO DATE.

I've heard some excellent planar designs before, as well as some great mixes of ribbon, electrostatic, and other new tweeter designs. From the start, however, the FR30's midrange and high-frequency sound quality was the best I've heard from any speaker to date.

There was more detail at every level of sound, but particularly on low-level passages that faded away into silence. There was no hardening of the midrange and treble at any listening level my ears were prepared to stand. The soundstage was as good as the source material permitted in terms of imaging, width, and depth. Moreover, placing the cabinet with the midrange and treble planers high up produced many of the advantages of a line source and a surprisingly wide listening position.

The one area where I had issues proved to be more a matter of taste and setup than inherent sound quality Listening to Paul and Chris' preferred placement position in an area in my listening room

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that I'd chosen more for social purposes and decor than for the ultimate in sound quality, I felt the result was just a touch bright or forward. I soon realized, however, that most of this effect came from the added level of detail and transparency in the midrange and treble. There were no areas where the sound hardened, where the midrange seemed colored or lacking resolution, or where performance altered from the lowest levels of dynamics and musical complexity to the highest. I could not hear any exaggeration or coloration on voice or musical instruments. As you might expect with a speaker with superior accuracy and resolution, close miking, the hardness of some older microphones, trace levels of upper-octave noise, manipulation of the recording by the producer, and the tendency to boost the upper-midrange level on some recordings were always apparent. But the added transparency that comes from improving any given component makes this inevitable.

The improved level of musical information with ordinary-to-good, and especially great, recordings more than compensates. This is particularly true when you are comparing different types of recording and the benefits of the best high-resolution streaming, SACDs, and DVDs. For example, this showed up clearly when I was listening to some recordings that used historical instruments. For example, try the La Petite Band recording of Vivaldi's *Le Quattro Stagioni* on the SACD version from Accent 24/79.

Improvements in musical information also show up with "ordinary" CDs, which seem to sound better and better as DACs and transports improve. Here, the FR30s made a significant improvement in the overall level of musical realism in the sound of Hillary Hahn's Brahms and Stravinsky Violin Concertos on a very ordinary but generally accurate Sony SACD (SS89649). Alternatively, if you have Qobuz, select one of the best high-resolution recordings you really admire and listen carefully to what the FR30 can do. In all these cases, the music opened up with more air and life and had a distinctly better soundstage and less coloration than I've heard to date from other speakers.

The FR30 could scarcely solve the problems inherent in the way any given recording was made, but time and again, it provided at least a bit more musical detail and realism. It eased the cases where some "difficult" instrument or voice seemed to be badly recorded, or some level of detail was missing. It also provided a mix of soundstage, musical realism, and imaging that let my ears focus on the recording rather than the size of the speakers, my exact listening position, and the mental (sorry, physical) health of my other components.

You don't have to focus on the most advanced recording and streaming technology to hear such differences. If you have been an audiophile for any length of time, you probably are firmly convinced that you have already listened to the CD or LP version of *Jazz at the Pawnshop* (Proprius) at least one time more often than is necessary in any given lifetime. Well, I won't tell you to be prepared for a shock, but do listen one more time to the percussion detail in *Pawnshop* played back through the FR30—particularly the realism of cymbals from first strike to total fade away. I think you may well feel you are hearing a better and cleaner recording.

The one caution I would give you about getting the best out of the FR30 is that it unless you have a truly large and neutral listening space, the FR30's bass performance may outperform the component that is hardest for you to change—your listening room. I've deliberately avoided commenting on the FR30's bass response so far. Not because the woofer and passive radiator technology I've described earlier did not produce some of the best integrated, most detailed, and deepest bass I've ever heard, but because most real-world listening rooms—including mine—limit the quality of that bass and the amount of low-frequency music you can hear.

This doesn't mean the FR30 presents more set-up problems than other speakers with really good bass response. In fact, it will probably present fewer. Even if you don't give the setup the attention the FR30 deserves, the technology of its bass drivers, passive radiators, cabinet, and crossover will probably still produce some of the smoothest, best integrated, and musically realistic bass you have heard. The fact remains, however, that below 200Hz, speaker placement really matters in almost all listening rooms. Below that frequency, the laws of physics dictate that the interactions between the room and the speaker increasingly begin to intervene, regardless of speaker make and design. I also find that the need for careful setup does increase steadily with the overall quality of the bass, particularly if you want the smoothest and most detailed bottom octaves, the most realistic dynamics, and a response that goes well below 35Hz. A few of my friends have large, dedicated listening rooms where such problems seem minor, but in almost every case I know of getting the best bass response still requires a period of listening and adjustment.

Really expert efforts to modify or damp the room can help, at the cost of décor and the placement of the speaker and listening position,

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but can only do so much. There also is no simple home measurement or set of rules that I know of that either predicts or measures the best location. Short of using some form of DSP room correction, you will have to make trade-offs, and any form of room correction I've heard to date has some limits of its own. I've found that the Legacy Wavelet does a remarkably good job in most cases, and the quality of room correction is steadily improving. However, most room correction still involves its own tradeoffs in sound quality.

In short, I'm scarcely suggesting that you should not get a reference quality speaker like the FR30 and should not seek to get the truly accurate and deep bass such a speaker can provide. (In practice, a couple of listening sessions and adjustments over a period of a few days allowed me to find several areas in my listening room where the FR30 had superb deep bass response. In the process, I soon found a location for both FR30s that was close to the position where it also seemed to have optimal treble and midrange overall performance.) What I am suggesting is that you should make a really serious effort to try different speaker and listening locations with any new high-performance speaker like the FR30 and do so even if you think you have found the right sweet spot for a different speaker in the past. I also suggest that you

## SPECS & PRICING

**TYPE**: Three-way hybrid dynamic/planar loudspeaker
**DRIVER COMPLEMENT**: 4x 8" woofers, 4x 10" side-firing passive radiators, 10" planar-magnetic midrange, 2x 2.5" planar-magnetic tweeters
**SENSITIVITY**: 88dB (2.83V, 1m)
**IMPEDANCE**: 4 ohms (3.6 ohms minimum)
**FREQUENCY RESPONSE**: 28Hz–20kHz (-6dB)
**DIMENSIONS**: 16" x 60.5" x 25.75"
**WEIGHT**: 230 lbs. each (net)
**PRICE**: $28,499/pr.

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keep trying out the sound of any adjustments in location, toe-in, and spacing once you find a sweet spot that gives you something close to the best bass in a given room.

At the risk of being labeled an audio neo-Luddite, I'd rely on listening to music over relying on measurements of frequency sweeps, displays of pink noise, or similar technical tests, unless you have a very skilled friend with a technical background who really knows what he or she is doing. As for me, I've found that test discs that use bass warble tones to hear and measure loudness by raising or lowering the bass frequency by one Hertz at a time can help, but only if you listen carefully to your music to check the result rather than relying on such measurements exclusively, and only if you stay focused on the overall sonic quality of music you hear rather than trying to get the most bass energy at the lowest frequency possible. More broadly, Robert Harley has some very good speaker-placement recommendations that don't require technical measurements in his book *The Complete Guide to High-End Audio*, and Paul McGowan has his own guide, and a matching test disc, in his *Audiophile's Guide to Stereo.*

In short, I'm trying to explain one of the reasons why Dave Wilson once called high-end audio a "sport." The FR30 can give you bass that is at least as good as any single integrated reference speaker I've ever heard. *But* going for any high-quality speaker means you do have to play the game. You also can't turn this set-up effort over to your dealer or an audiophile friend. They can be of great help, but letting anyone else make your final decisions is not the answer. In fact, failing to play the audio game in speaker setup is a little like hiring a tennis or golf pro to play the game for you. Achieving reference quality is a sport in which you must participate.

## SUMMING UP

If you are wondering about my emphasis at the start of this review on how impressed I was with IRS Reference and Genesis I in their day, let me stress that I've been reviewing for far too long to let hope or nostalgia substitute for real-world performance in a constantly evolving high end. If anything, I tend to be a bit hypercritical in evaluating anything I consider for purchase. The FR30, did more than live up to my hopes, however, and one way to sum up is to state that I'm buying my review pair as another set of reference speakers. The FR30 is truly outstanding, highly recommended, and well worth the set-up effort necessary to make it perform at its best! tas

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# Manufacturer Comments

## YG Acoustics Vantage Live

All of us at YG Acoustics, Bel Canto, and CAS would like to thank Robert Harley for his detailed review of Vantage Live. We're pleased he liked the system so much.

For the design team, Vantage Live was something we had all wanted to do for a long time, as companies and as individuals. It was an exercise in pushing the boundaries of audio design, and building a system where every element was the best it could be for the role it played.

The musical signal travels from the controller to the speakers on glass fibers, where it is processed by a DSP crossover tuned to the exact end-to-end behavior of the complete system. Just a few inches separate the DSP, DAC, and power amplifiers, with the DACs linked to the power amplifiers by custom, discrete Class A amplifier stages. Finally, each power amplifier is connected directly to a drive unit by a short length of high-quality cable.

For us, the sound was everything we hoped for, and more. The convenience was a wonderful by-product.

**Steve Huntley, YG Acoustics**
**John Stronczer, Bel Canto Design**
**Matthew Webster, CAS**

## LSA Warp 1

Thanks to Steven Stone for the fine review of our LSA Warp 1 amplifier. Our design team worked extremely hard to deliver a high-power, accurate, and efficient amp at modern-day value pricing. Please note that these will be sold at $1199 through 2022 to deliver an even greater value.

I should note that we have users driving smaller Magnepan's up to the MG1.7 with the Warp 1, as it outputs 250 watts into 4-ohm loads safely and efficiently. Finally, for those who want a little less accuracy coupled with perhaps a bit more organic harmonic balance, matching the Warp 1 with a tube preamp like our new Hyper Drive 2 will deliver that. That package will sell for $1799 through 2022, as well. We talk to our customers and take their orders at (770) 667-5633, or via email at underwoodwally@aol.com. A Click-to-Buy option will be coming later this year.

**Walter Liederman**
**LSA**

## Heavenly Soundworks Five17

A listener's room has a significant impact on the overall performance of his audio system. This is why there is an entire industry focused on room treatment. As a loudspeaker manufacturer, we are not in the business of fixing rooms; however, we do recognize the impact of room acoustics on the performance (and enjoyment) of our products. If you are interested in attaining the level of perfection that Robert Greene was chasing in his listening rooms, based on our experience, here is your roadmap: 1) treat your room (if possible); 2) dial in your speaker placement; 3) measure your system and start making adjustments through EQ.

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**The Heavenly Soundworks Team**

## Lumin P1

We would like to thank Robert Harley and *The Absolute Sound* for the outstanding review of our Lumin P1 and for the 2022 Golden Ear award (Issue 330). To the best of our knowledge, the P1 opens a new category of audio streamer/renderer inclusive of a preamp, A/V hub, control application, and dual mono DACs. Again, our sincere thanks to TAS for making this new introduction viable to the audio enthusiast.

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**Mark Gurvey**
**Source Systems Ltd.**

## Magnepan LRS+

I am not sure that Jonathan likes to be compared to HP, but there is one area where he is miles ahead of HP—technical comprehension. The LRS+ review is one of the finest (best?) technical synopsis for the layman that I can recall—*amazing*.

In this age of everything-is-good, he reminds me of HP in that he doesn't hold back on what doesn't make the grade. I actually liked the drubbing he gave me about my tight-lipped policy. It adds credibility to the fact that he is not a Maggie evangelist.

**Wendell Diller**
**Magnepan**

## Vivid Audio Kaya S12

Many thanks for this stunning review. Neil's reaction vindicates the engineering-led approach we have to loudspeaker design. While we have never underestimated the importance of the listening experience, we feel that progress can only be made through a well-founded understanding of the fundamentals of acoustics and by paying close attention to the details of the measurements and then having a good long listening session. It's rare that one contradicts the other. We apply our principles to every aspect of our products including the stands, which have been designed to complement the loudspeaker not only in aesthetics, but also in optimal structural support and acoustics. Please also note that we do build everything in-house, most particularly the drivers. This allows for excellent consistency and pair-matching and a guarantee that a recently produced product will sound exactly the same as one manufactured at the introduction of that model.

**Laurence Dickie**
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# Marta SÁNCHEZ

## COMPOSER-PIANIST LEADS A STELLAR QUINTET

Bill Milkowski

Since arriving in New York City from her native Madrid in 2011, Spanish pianist-composer Marta Sánchez released an impressive string of quintet albums on the Barcelona-based label Fresh Sound New Talent that earned her critical acclaim. *New York Times*' jazz critic Ben Ratliff listed her 2015 outing, *Partenika*, among his Top Ten recordings of that year. Her 2017 followup, *Danza Imposible*, and 2019's *El Rayo de Luz* were similarly praised for their deft use of polyphony, interwoven lines, overlapping rhythms, and bold group improvisations. Current *NYT* jazz critic Giovanni Russonello touted Sánchez's quintet as "one of the most consistently satisfying bands in contemporary jazz" while Nate Chinen, former *NYT* jazz critic and current editorial director for Newark-based radio station WBGO's website, likened her "melodic counterpoint with a clockwork ingenuity" to Argentine composer Guillermo Klein, whom Sánchez studied with in Barcelona and considers a mentor.

In his *Fresh Air* review of *Danza Imposible*, jazz critic Kevin Whitehead pointed out Sánchez's skillful use of "hocketing," a technique of sharing parts of a melody between two or more voices that harkens back to medieval times and is also present in early New Orleans jazz. The two voices that she has exclusively used to engage in her refined game of hocketing on the front line of her potent quintets are alto and tenor saxophones. On Sánchez's latest release and her debut on the London-based indie jazz label Whirlwind Recordings, *SAAM (Spanish American Art Museum)*, those voices belong to Cuban-born tenor saxophonist and longtime collaborator Roman Filiú and his alto sax counterpart Alex LoRe. Together the two saxes navigate Sánchez's intricate chamber-like compositions with exacting precision, creating beautiful harmonies, shifting counterpoint lines, and interwoven melodies while often building tension by playing one horn against the other. It's been Marta's modus operandi since she began gigging in Spain, revealing her classical training (she studied at Madrid's Real Conservatorio Superior de Música) along with her obvious love of jazz improvisation.

On *SAAM*, a collection of pieces composed during the pandemic lockdown of 2020, when her own mother became a victim of COVID-19, Sánchez's overall tone is decidedly darker and more abstract than her previous recordings, reflecting some inward examination of her own fears and sense of loss. There is nothing here as giddy and uplifting as the title track to *Danza Imposible*, a buoyant ditty which has the effect of hearing birds simultaneously chirping in the trees, though the composer explains it was actually her attempt at mimicking the digital delay echo effects she heard on a recording by electronic music maestro Aphex Twin. "Sometimes I do a lot of that," she said. "I create effects by trying to imitate things that come from other work. And I imitate it with the saxophones."

Instead of something as effervescent and ebullient as "Danza Imposible," *SAAM* tends towards melancholy odes like the somber "Dear Worthiness" and mournful "The Eternal Stillness." Sánchez's tender homage to her mother on the elegiac "Marivi," is the lone tune on the album not featuring the two saxophones upfront engaging in hocketing, call-and-response, or interwoven lines. Instead, it features special guest trumpeter Ambrose Akinmusire blowing warmly melodic lines and vocalist Camila Meza delivering the touching lyrics (in Spanish) with a sublime touch. The delicate and ruminative "The Hard Balance" continues this inward-looking theme while "December 11th," the day that her mother died, is an exercise in gentle polyphony from the saxes, tinged in melancholy and highlighted by a cascading piano solo from the composer.

"I think, in general, my writing has been evolving to a dark place and a bit more abstract," said Sánchez. "But aside from that, the pandemic did have a big effect on this record. At first, I actually was thankful for the extra time it gave me because I was super busy the previous months before the pandemic hit, and it was good to have time to practice, to relax, to write music and everything. But then as the pandemic was evolving, it be-

came about being at home all the time, staying inside day after day, which is really hard to deal. I started having panic attacks, which is something that I never had before. People that never went through that don't understand the feeling, but it's like really hopeless and suddenly you don't see any meaning to life. 'The Eternal Stillness' reflects that feeling of nothing changing, about going through the same patterns, the same feelings about yourself and your life. And it reflects this feeling of hopelessness that I was feeling, where I was like losing my faith in everything. And then the thing that happened with my mom, that I lost her… yeah, that was hard."

At her lowest ebb during lockdown, when she couldn't escape being fully in her own head, Sánchez began to question her own worth during lockdown, a sentiment which is reflected in her somber ballad, "Dear Worthiness." But there is also a pugnacious aspect to *SAAM* in the kinetic groovers "The Unconquered Vulnerable Areas" and "When Dreaming Is the Only," which bookend this very personal project. Both compositions are powered by the crisply interactive pulse of drummer Allan Mednard alongside the rock-solid lines of bassist Rahsaan Carter and feature the spirited trading of outstanding saxophonists LoRe and Filiú; the latter is primarily an alto player, but he shifted to tenor for this recording to make way for LoRe. The dissonant comping, angular lines, and insistent grooves of these opening and closing numbers carry a kind of Steve Coleman and Five Elements vibe. And Sanchez acknowledges the influence. "Steve is like an influence on almost everybody because a lot of the musicians that are on the scene now have played in his band," she said. "So he has been like a mentor for many musicians. Of course, I listen to this music and I know a little bit of his concept because I know people that play with him, and they explained to me some of the things he's doing."

Regarding her own signature use of polyphony throughout *SAAM*, Sánchez said, "It's not something that's totally new. If you listen to my first quartet record in Spain, there are a lot of those elements already there through the way piano interacts with the saxophone to create contrapuntal melodies. But it's developed a little bit more having another voice in there, the second saxophone. So I've been writing for quintet since arriving in New York because I wanted to create more layers and different textures, and I wanted one more voice to be able to develop that part of my composition. And I chose saxophone because I like the register and all the flexibility that it brings, but also the warmth of the instrument."

Between her inventive use of counterpoint, her gift for melody, and her ability to conjure up moods and deep feelings by weaving melodies into intricate latticework patterns, Sánchez has distinguished herself as a talent deserving of wider recognition. And she mines the motherlode of personal, very human expression on *SAAM (Spanish American Art Museum).* tas

# Topping the Charts without Even Trying

## *Stranger Things* Sparks a Kate Bush Revival

Greg Cahill

**The title of Kate Bush's 2018 book of lyrics, *How to Be Invisible*,** suggests a faded pop star who lacks cache in the modern music world. It's true that Bush avoids the limelight, but this retiring figure has a way of staying in the public eye. Last year her 1980 single "Babooshka" went viral on TikTok, with thousands of homemade videos featuring that song; apparently Bush's mystical aura and cloaked appearances in the 40-year-old official music video appealed to that subset of TikTok known as WitchTok. All that was small potatoes, however, compared to more recent events. This summer the reclusive British singer, songwriter, keyboardist, dancer, performance artist, video creator, producer, and feminist icon stepped back into the limelight when her 1985 hit "Running Up That Hill (A Deal with God)" climbed pop charts worldwide, topping the UK rock chart and peaking at No. 4 on the Billboard Hot 100. In early June, it became the No. 1 song on Spotify's daily global chart with 8.42 million streams; as of July, TikTok videos featuring the song have been viewed more than 895 million times.

The sudden ubiquity of "Running Up That Hill" can be traced to its prominent placement in the fourth season of *Stranger Things*, the popular Netflix sci-fi fantasy series set in the 1980s. "I think it's struck a chord for so many people because it really touches on the alienation and emotional struggle that so many of us go through at one point or another in life, especially as teenagers," the show's music supervisor Nora Felder told the *Washington Post*. "Music gives us validation and strength, especially when we aren't feeling supported or understood by others."

Bush's poetic, cinematic, and often dreamlike songs are filled with Jungian imagery, Celtic mysticism, sensuality, nature, death and deception, role reversals, feminism, and literary references. Some of her biggest fans include fellow musicians. "When Kate had her first hit with 'Wuthering Heights,' I felt as if we—the British public—had got an old soul back," Mike Scott of the Waterboys told *The Guardian UK* recently. "It was like an old strain of English magic had returned in her persona, and so it has been." The now-64-year-old's esoteric art-rock has also been a huge influence on a new generation of female artists. Her adventurous vocal style, theatricality, independent spirit, and fearless experimentalism have also inspired Lorde, Tori Amos, Lana Del Rey, Björk, Joanna Newsom, Fiona Apple, PJ Harvey, St. Vincent, Mitski, Jenny Haval, Sharon Van Etten, Perfume Genius, the Cocteau Twins, and Enya, to name a few, During her career, Bush has garnered numerous awards: She is a three-time Grammy nominee, a three-time inductee into the Rock and Roll Hall of Fame, a 13-time nominee (and one-time winner) of a BRIT Award, a two-time recipient of an Ivor Novello Award for Outstanding Contribution to British Music, and a *Prog* magazine Prog Goddess nominee. In 2013, Queen Elizabeth II awarded Bush the status of Commander of the Order of the British Empire (CBE) in recognition of her work in the nation's music industry.

These days, Bush is thrilled, though a bit surprised, to be back on top. "[*Stranger Things*] is such a great series—I thought that the track would get some attention," she told Emma Barnett of *Woman's Hour* on BBC Radio 4. "But I just never imagined that it would be anything like this. It's so exciting. It's quite shocking really, isn't it? I mean, the whole world's gone mad."

When an artist has a large body of work—Bush's discography includes 10 studio albums, two live albums, compilations, live sets, EPs, and singles—it's natural to seek out compilations. One recommendation would be *Kate Bush: The Whole Story* that EMI released in 1986 and then reissued in 2015. The album, which is available in CD, vinyl, and streaming formats, was her first collection of career highlights and included a remixed version of "Wuthering Heights." The concise 12-song set features material from her first five albums, and yes, "Running up

that Hill" is on this compilation. The album offers a good cross-section of early Kate Bush material, but since then Bush has released five more studio albums—so *The Whole Story* should be looked at as a good starting point.

A good cross-section of her later work appears in a 29-song live set released in 2016. Bush performed a 22-date run at London's Apollo Hammersmith in 2014. Two years later, Concord released *Before the Dawn*, three-CD and four-LP recordings of those concerts that featured a bonus track ("Never Be Mine") and Bush's son, Albert McIntosh, singing on "Tawny Moon." *Before the Dawn* bypasses material from Bush's first four albums, and it includes adventurous song-suites from 1985's *Hounds of Love* and 2005's *Aerial*. It speaks volumes that, so late in her career, Bush avoided sticking solely to "the hits," instead concentrating on longer pieces that took the audience on a musical journey whose visual and theatrical elements will hopefully appear some day on DVD.

Fans hoping for a broader overview might look into Rhino's *Kate Bush Remastered*, which offers all of her studio albums along with 34 rarities. Supervised by Bush and skillfully remastered by James Guthrie (Beatles, Pink Floyd), the series includes Bush's debut, *The Kick Inside*, featuring the breakthrough single "Wuthering Heights," which was co-produced by David Gilmour (1978); *Lionheart* (1978); *Never for Ever*, which included "Babooshka" and took a darker turn, introducing theatrical prog-rock elements (1980); *The Dreaming*, her first entirely self-produced album and one that also found her exploring new musical territory (1982); *Hounds Of Love*, recorded on piano and Fairlight CMI synthesizer in the 48-track studio she built in her barn—it spawned "Running Up That Hill" and the hit "Cloudbusting" (1985); *The Sensual World*, which featured the Bulgarian vocal ensemble Trio Bulgarka and the single "This Woman's Work," used a year earlier in the John Hughes film *She's Having a Baby* (1986); *The Red Shoes*, inspired by the Hans Christian Andersen tale with appearances by Prince, Eric Clapton, and Jeff Beck (1994); *Aerial*, her first double album, which featured her brother Paddy and marked her return after a 12-year hiatus (2005); *Director's Cut*, released on Bush's Fish People label and featuring remixed and restructured songs from *The Sensual World* and *The Red Shoes* (2011); and *50 Words for Snow*, seven piano ballads set against the theme of falling snow, including a duet with Elton John (2011).

The remasters quickly shot up the UK charts, and Bush became the only female artist to have eight albums in the UK Top 40 in the same week, rivaling similar feats by The Beatles and Elvis Presley. Individual albums from the series are available on 180-gram vinyl, CD, 24-bit/44.1kHz downloads, and lossless streaming. tas

# Not The Usual Suspects

## Four New Releases from Off-the-Radar Pianists

Andrew Quint

**We all know the general outlines of the idealized** career path for a solo classical artist, as told to us by publicists and liner notes. Lessons with Mom as a precocious toddler; a concerto appearance with the local symphony by early adolescence. Admission to a top conservatory to study with a revered pedagogue; summers spent rubbing elbows with established superstars at chamber music festivals in the countryside. And finally arriving at the promised land of 100 well-paid performances per year and an exclusive recording contract by the time he or she reaches the age of majority. But if all you listen to are the household names with this kind of CV, you'll be missing a lot of great music-making. Even in the allegedly constrained world of classical music, there are plenty of talented people who must make a considerably less charmed journey in order to say what they need to say as artists. Four new albums from off-the-radar pianists make the point very nicely.

Peter Schaaf, now approaching 80, was a student of the legendary Rosina Lhévine at Juilliard and subsequently had plenty of work as a sought-after accompanist—he was at the keyboard for Yo-Yo Ma's New York City recital debut in 1971, for example. But Schaaf was also a gifted photographer, specializing in musician portraits, and a successful music journalist. He eschewed the piano for decades before returning to his instrument in 2008 to master and ultimately record a work he loved, Isaac Albéniz's *Iberia* (TAS 223). A program of waltzes by Dvořák, Schubert, Brahms, and Ravel followed (TAS 272) plus two discs of Chopin, including this 2022 recording of the Andante Spinato in G Major and eight Polonaises. The pianist issues recordings on his own label; they're available gratis on the artist's website—this one as 24-bit FLAC and WAV files, no less—though Schaaf gently suggests that, if you do opt for a free download, you consider purchasing a CD or two as gifts for others.

Schaaf's Chopin is technically secure but never flashy, the music unfolding with songful grace. Some might play the characteristic polonaise rhythm with more of a "hitch" but, honestly, that can get old pretty fast. More important than flamboyant execution or matters of stylistic "authenticity" is that Schaaf clearly comprehends that these pieces, so enjoyable without much deep thought, represent a great composer's ability to imbue an unassuming dance form with profound musical meaning. The piano's treble register manifests some "pinginess," which doesn't disqualify this CD in the least, even for the sonically obsessed.

Thomas Bartlett's musical interests are wide-ranging, to say the least, his collaborators as a young man a who's who of New York artistic chic—Yoko Ono, David Byrne, Laurie Anderson, that sort of crowd. Early on, Bartlett played piano and, calling himself "Doveman," was the singer for a band with a fluid roster of musicians. He's a long-term member of The Gloaming, an Irish/American supergroup. Increasingly, Bartlett has served as a producer for others, artists as varied as Sufjan Stevens, Mandy Patinkin, Florence and the Machine, Norah Jones, and Rufus Wainwright.

Bartlett has worked with composer Nico Muhly for years on a number of projects but has never, on his own, been associated with mainstream classical music. Yet when Bartlett hunkered down for a stretch of the pandemic in an English farmhouse with his partner, actress Ella Hunt, he found himself chipping away at the keyboard repertoire he played as a child and prepared a recital for Hunt's parents that included one of J.S. Bach's French Suites. On returning to New York, Bartlett recorded (for The Dwelling Music, LLC) four of the six Suites on a Yamaha upright. The audio quality is pretty awful, dull and airless, sometimes sounding barely like a piano. It's almost as if Bartlett wants to obscure his technical limitations with bad sound. There's metrical unevenness, inconsistent tone production, and dynamic shadings can seem arbitrary. His playing seems overly cautious, with even the joyous gigues are decidedly earthbound. But the fact is…these performances grow on you. Bartlett is obviously deeply connected to the music and you may find yourself unable to decline his invitation to join him in his explorations. The lesson here may be that we're all entitled to obsessively consume the music we care about most, perhaps even bringing others along for the ride.

The centerpiece of *Americanist*, Elizabeth Newkirk's first solo recording on the adventuresome Bright Shiny Things label, may actually not be the performances but, rather, the heady 2500-word essay the pianist wrote to accompany the CD. Newkirk dissects the myth of the American dream with commanding intellectual precision, maintaining that an understanding of the country's cultural identity is best accomplished through the lens of two important philosophical schools—the transcendentalist movement, personified by such thinkers as Whitman, Emerson and Thoreau, and the "New

Negro" movement, led by W.E.B. Du Bois, Langston Hughes, Zora Neale Hurston and others. For Newkirk, it was largely Black intellectuals who were responsible for the reconciliation of the "serious" and "popular" aspects of American culture.

By programming piano reductions of three orchestral works composed during the period between the two World Wars, Newkirk offers powerful support for her thesis. Ravel's *La Valse* references jazz and the quasi-hallucinogenic imagery of Edgar Allan Poe; no composer more effectively bridged the worlds of serious and popular art than George Gershwin, whose *An American in Paris* follows next. Third on the CD is the four-movement *Africa* suite by William Grant Still, a representative of the "New Negro" elite. Newkirk's *La Valse* has a dreamlike, half-remembered quality and she negotiates the Gershwin and Still pieces idiomatically. The soloist is awarded a full, involving piano sonority in a relaxed yet clarifying acoustic.

You can inquire online about piano lessons with Matei Varga, an undertaking that's unlikely to lead anywhere with, say, Lang Lang, Martha Argerich, or Emanuel Ax. This, despite glowing reviews as a soloist on both sides of the Atlantic, Varga's receipt of the 2021 Romanian-American Fine Arts Award, and his position as the Artistic Director of a prestigious international piano competition. Varga doesn't have a major label recording contract and the liner notes for his new CD, *The Year That Never Was,* thank two-dozen Kickstarter backers that made the release possible. We should thank them, as well.

Like Schaaf and Bartlett, Varga describes the corrosive effect of the pandemic on a performing artist's life, though allowing that it wasn't all bad: "Staying home with my piano," he wrote, "offered me a better view towards my inner self and a chance to experience the joy of a new discovery." That discovery was the music of Ernesto Lecuona (1895–1963), the Havana-born composer and pianist, sometimes known as the "Chopin of the Tropics" or the "Cuban Gershwin." Varga plays 10 Lecuona miniatures along with some actual Chopin and Gershwin, plus short pieces by Scarlatti, Beethoven, Balakirev, and the living Romanian composer Andrei Tudor (his madcap *Rondo alla Crazy*). Varga has a monster technique—check out his performance of Chopin's *Revolutionary* Etude in C Minor, Op. 10, No.12—and all of his interpretations are fully idiomatic. He spent his Kickstarter cash well, engaging Sono Luminus of Boyce, Virginia to record his program; there's nobody better than Daniel Shores when it comes to making piano recordings. The keyboard sound has power, body, and the ideal degree of immediacy.

When interviewed several years ago, Varga was asked for what advice he'd give a young pianist. "Resist assimilation," he answered. I suspect that the other three artists noted above would offer similar counsel. **tas**

# ALL ROADS LEAD TO AVALON

## HALF-SPEED ROXY MUSIC REISSUES IMPRESS

BY JEFF WILSON

Between 1972 and 1982, British Roxy Music released eight studio albums that were so influential it's hard to imagine how pop music would have evolved without them—certainly it would have been less interesting and less colorful. Roxy's output was consistent enough that career-spanning compilations would seem to be in order. In 2012 Virgin released *The Complete Studio Recordings*, a 9-CD box set that included a disc of B-sides and other ephemera. Given the resurgence of vinyl, wax was bound enter the picture, and 2015's *The Studio Albums* contained eight platters that were remastered at half-speed by Miles Showell at Abbey Road Studios. A recent slate of reissues shares some provenance with *The Studio Albums*, but read carefully. This year half-speed masters by Miles Showell and Abbey Road Studios have again entered the marketplace—but that's because the Abbey Road team remastered the vinyl a second time. As with the box set, these albums were cut from high-resolution digital archive files transferred directly from the original master tapes, but these aren't carbon copies of the box set. According to Martyn James, "The new cuts are taken from the masters that Miles created for the 2014 box set, but they were brought up to date and cut on a different lathe, using new, updated software and equipment. The new lathe that Miles is now using is of a much better quality and therefore Miles was able to deliver a superior cut to the 2014 titles. Additionally, we moved all of the studio albums from GZ to Optimal for these new cuts. It is our belief that Optimal press and produce the best vinyl in Europe (if not the world)." Instead of combining all the titles in a box set, Virgin/UME is making each LP available individually. Rather than spring for a deluxe edition, then, consumers can pick and choose their favorite titles.

Roxy's eponymous debut album (1972) and *For Your Pleasure* (1973) are products from the early days of glam rock, when flamboyantly dressed musicians tried to create music as outrageous as their outfits, but even within that framework Roxy carved out a unique sound. At times Bryan Ferry sang like an off-kilter fifties rocker, an impression that was enhanced when he pounded out rock 'n' roll chords on an acoustic piano, and a rhythm section propelled by drummer Paul Thompson offered a firm foundation. It was the layers sprinkled over top—the handiwork of Eno (synthesizer, tape effects), Andy Mackay (saxophones, oboe), and Phil Manzanera (electric guitar)—that threw a curve ball into Roxy's sound. Some instruments seemed antiquated while Eno's synth sounded as futuristic as it looked, and the sounds coming out of those instruments were tweaked in every which way. The front-line instruments sometimes battled for the foreground, yet it says something about the level of artistry involved that, in spite of all the chaos, the whole thing sounded very musical—and fun. Rarely is music this hip so playful.

After Eno departed, the multi-instrumentalist Eddie Jobson assumed a key role for the next three studio albums, *Stranded* (1973), *Country Life* (1974), and *Siren* (1975). Along with electronic keyboards, Jobson played electric violin, which, like Andy Mackay's oboe, gave an old instrument a modern twist. Gradually the band became more polished and streamlined. In part the more straightforward sound might

have been a natural progression, but Roxy also made a clear attempt to broaden their audience, especially in America, which was slow to pick up on quirkier groups from across the pond. The leadoff single from *Siren*, "Love is the Drug," has radio-friendly written all over it, but at the same time it's *so* Roxy Music, with lyrics so deliberately corny ("I say go/She says yes/Dim the lights/You can guess the rest") that there's no way Ferry could sing them with a straight face—which tells us that Roxy played the radio game on *their* terms.

Roxy Music was one of many veteran bands to lose their spark in the late 1970s and early 1980s. The lethargy of *Manifesto* (1979) and *Flesh + Blood* (1980) was underscored by some uninspired covers, including a version of the Byrds' "Eight Miles High" that never leaves the ground. At times during *Flesh and Blood* you hear a group feeling its way toward a new sound but never putting all the pieces together. The first few bars of "More Than This," the leadoff track for the next album, 1982's *Avalon*, tells us where the music was headed. Immediately the dreamy, seductive spell is set, and that mood is sustained throughout the record.

For reasons that quite possibly have to do with the original recordings, while listening to the half-speeds I noticed an uptick between the sonics on Roxy's eponymous debut album and their third LP, *Stranded*. (I still haven't been able to get my hands on a half-speed of *For Your Pleasure*.) What I'll dub the three "middle-period albums" (*Stranded*, *Country Life*, and *Siren*) impressed me musically *and* sonically, with high marks for the level of detail emerging from inside the grooves. The new half-speed version of the best song on *Siren*, "Both Ends Burning," sounded cleaner and much more open than it did on the original US pressing, and Eddie Jobson's keyboards had a stronger presence, which in turn brought a more sinister tone to the song. And while the highs were more pronounced, the half-speed also boasted a firm, clearly defined bottom end, including John Gustafson's aggressive bass lines. By comparison, *Manifesto* and *Flesh + Blood* sounded anemic and less open.

Finally, I was quite fond of the half-speed of *Avalon*. Listening to "The Space Between," I was impressed by the full, detailed, and vivid sound leaping out of the grooves. If the same song on my Robert Ludwig-mastered original US pressing of *Avalon* packed slightly more of a punch, well, remember, that's setting the bar quite high. Also, on an album that contains a thousand small details, it impressed me how minutiae like the incidental percussion on "The Space Between" came through with so much clarity on the half-speed. That attention to detail characterized the half-speeds in general and deepened my appreciation of several titles, including *Avalon*. I'm greedy—I want the Ludwig-mastered original of *Avalon* and the half-speed. For thirty bucks a pop, you can afford to be greedy too. **tas**


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MUSIC ●●●●◐ SONICS ●●●●○

**Gaby Moreno: *Alegoría.*** Metamorfosis/Sony.

You never know what you'll hear on a Gaby Moreno album, but it's always good. The sassy Dixieland swagger of "Nostalgia," from her 2012 Grammy-winning Warner debut *Postales*? Check. The 2014 Christmas song "Peces en el Rio"? Check. The funkified "Se Apago," from 2016's *Ilusión*? Check. The border music of *Spangled!*, a 2019 collaboration with Van Dyke Parks and Jackson Browne? Check. A hit Disney theme song ("Elena of Avalor")? Check. Over the past decade, the L.A.-based Guatemalan singer, songwriter, guitarist, and producer has created blues-hued pop that's grounded in her Latin roots. Here her A list of collaborators includes mandolinist Chris Thile; guitarists Adam Levy, Greg Leisz, and Marc Ribot; pianist David Garza; and organist Larry Goldings. Songs, performed in Spanish and English, range from traditional to futuristic twang. The opener, "Nobody's Wrong," is a roots-rock plea for social calm. The sultry "Cuando Nadie Miraba" would fit into a David Lynch soundtrack. The original "Maybe Today, Maybe Tomorrow" echoes the cowboy psychedelia of Lee Hazlewood, who Moreno deftly covers on "Dulce Amor." The playfully atmospheric "Lost on a Cloud" suggests a Latinx artist who has learned the lessons of Los Lobos' *Kiko*. Savor the search for hidden meaning in these small allegories. **Greg Cahill**

**Further Listening:** Gaby Moreno: *Postales*

MUSIC ●●●●● SONICS ●●●●○

**Regina Spektor: *Home, before and after.*** Sire/Warner.

Regina Spektor is a musical free spirit whose songs develop in unpredictable ways while her lyrics seem completely unfiltered. At turns perplexing, playful, and riveting, those lyrics can seem deeply personal in one line and Big Picture in the next, yet in spite of (or because of) Spektor's idiosyncrasies she's built a loyal fan base, which means that, after a six-year gap between LPs, they should be hoping for a home run. If so, they won't be disappointed. Working in tandem with co-producer John Congleton (St. Vincent, Sharon Van Etten), Spektor wanders freely between piano-based intimacy and lush soundscapes. The opening track, "Becoming All Alone," makes the stress of solitary confinement seem all too real while the riveting "Up the Mountain" sounds like a Zen parable (either that or she's taking a certain Kate Bush metaphor to the next level). During the chorus of "Coins," she really has to belt it out to compete with a wall of sound, a challenge that lends more poignancy to the performance. When Spektor sings about "an incurable humanness" on "Loveology," that seems to sum up the album and the artist. She's done her part—now it's *our* turn to spread some loveology. **Jeff Wilson**

**Further Listening:** Tori Amos: *Ocean to Ocean*; Inara George: *Dearest Everybody*

MUSIC ●●●●◐ SONICS ●●●●◐

**A Tribe Called Quest: *The Low End Theory.*** Vinyl Me, Please (2 LPs).

Widely regarded as a masterpiece from the progenitors of jazz-inflected hip-hop, A Tribe Called Quest's sophomore album *The Low End Theory* gets its well-deserved place in the Vinyl Me, Please "Essentials" category. A 2-LP pressing at 45rpm, the sonic quality is about equal to that of this reviewer's no-frills 33rpm 2-LP reissue from 1996: clear, very little surface noise, a preservation of the punchy rhythms and bass heftiness that famed sound engineer Bob Power is credited with capturing. But the VMP packaging is superior, with its colorful gatefold interior photos of Tribe, a booklet of liner notes written by VMP's hip-hop director Marcus J. Moore, and a sturdy black and white art print by photographer Joe Grant. Listening to this is a gratifying experience that underscores what a feat of production and artistry the album truly is, its disparate samples pieced together so cleanly under a smooth flow of rhymes from Tip, Phife, and members of the extended Native Tongues crew. Three decades later, *The Low End Theory* has proven to be a body of work that remains on point, all the time. Fill the gap in your collection with this reissue if you can. **Pam Torno**

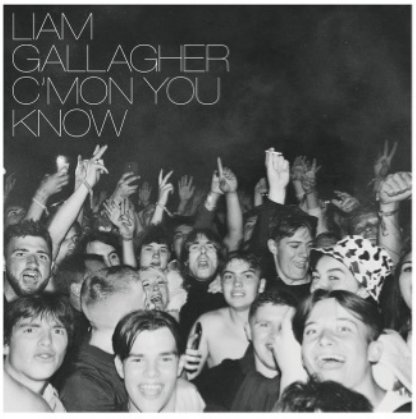
**Further Listening:** Various Artists: *Blue Note Re:Imagined* (2020); Q-Tip: *Kamaal the Abstract*

MUSIC ●●●●○ SONICS ●●●●○

**Andrew Bird: *Inside Problems.*** Loma Vista.

Andrew Bird has forged a distinctive path for himself in his 25-plus year career. Renowned for his unique whistling accompaniment, tongue-twisting lyrics, and heady chamber pop, Bird delivers an understated prize with *Inside Problems*. The opener, "Underlands," ushers in Bird's pizzicato violin and layered whistle solo amidst an anxious, late-night reverie of consternation at the world. "I mean, listen/What if the world/Goes splitting off its axis/And what if the moon/Begins to wane before it waxes," Bird sings—and we're off, ever mindful of Bird's witty aphorisms and moody melodies. With a literary bent and an insistent chorus in "Lone Didion," he imagines the late author, Joan Didion, escaping her late-life, widowed loneliness with a road trip out west. "Make a Picture" builds in intensity with the record's most enthralling hook, and the band's reckless sweep juices the song with contagious abandon. Possibly in homage, several songs, "The Night Before Your Birthday" and "Never Fall Apart" among them, strongly evoke the Velvet Underground's influence with the spare dynamics, vocals, and slow crescendos. The latter song, which specifically calls to mind the Velvet's "Heroin," resolves *Inside Problems* with a ravishing coda. **Greg Gaston**

**Further Listening:** Calexico & Iron and Wine: *Years to Burn*; Matthew Sweet: *Catspaw*

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**Liam Gallagher: *C'mon You Know.*** Warner.

This is Liam Gallagher's third solo album, coming after the dissolution of Beady Eye and, before that, the acrimonious split with his brother, Noel, that ended Oasis. It has all his trademarks: chugging 4/4 rhythms, those blue-note melodies that thrive in rock 'n' roll, uncomplicated chords, and direct writing. That voice with its natural sneer is still unfettered by artifice: it's not an act—it's just how he sounds. Yeah, truth be told, Liam is never going to win prizes for poetic or musical depth, but his lack of cynicism made this record grow on me. There's plenty I could do without—the children's chorus and too-obvious lyrical nods to the Stones in "More Power," a keyboard's terrible cello patch in "Moscow Rules," the inept snare drum that rattles over the reggae feel of "I'm Free"—but I can understand his appeal. His outlook is always ultimately positive, and even an ex-lover's past shortcomings are addressed with wry humor and followed by encouragement: "You were all thumbs/Through the dark days/When your time comes/Don't go halfway." I'll take that over Taylor Swift. Gallagher's concept of rock music might be undemanding, but it makes for a solid album. **Stephen Estep**

**Further Listening:** Zwan: *Mary Star of the Sea*; Oasis: *Standing on the Shoulder of Giants*

MUSIC ●●●●○ SONICS ●●●●○

**Grant-Lee Phillips: *All That You Can Dream.*** Yep Roc

There's an inviting melancholy to Grant-Lee Phillips' effortless vocals. Indeed, many of the 11 tracks on *All That You Can Dream*, have a dewy, dreamy quality, thanks to its soothing chamber-folk instrumentation: Phillips plays guitar, piano, pump organ, and mellotron and is joined by Richard Dodd (cello), Eric Heywood (pedal steel), Jamie Edwards (chamberlin and piano) and Jennifer Condos (bass and drums). Yet that calm belies artful social commentary. "We're all walking on a razor's edge tonight," he laments on "Peace Is a Delicate Thing." It's an unsettling image that suggests a world in conflict. The title track—dedicated to his 14-year-old daughter, who is trying to make sense of rapid social changes—is a stark condemnation of racial injustice. He tackles other lofty topics—cynicism, man's inhumanity to man, authoritarianism—without being polemical or pedantic. His ire rises again on "A Sudden Place," "Rats in a Barrel," and "Cruel Trick." As he declares on "My Eyes Have Seen," "History books might hide this shameful page," but there's no denying what his eyes have seen. Clearly, the musician-cum-actor who portrayed the Town Troubadour on TV's popular *Gilmore Girls* series has opened the floodgates on his worldview. **GC**

**Further Listening:** Grant-Lee Phillips: *nineteeneighties*; Grant Lee Buffalo: *Jubilee*

MUSIC ●●●●◐ SONICS ●●●●○

**Heather Maloney: *No Shortcuts (Live at the Academy).*** Signature Sounds.

During the past two-plus years there haven't been a lot of live concert recordings released due to the dearth of in-person performances, but singer-songwriter Heather Maloney has bucked the trend by releasing *No Shortcuts*, recorded in 2019 in Northampton, MA. The 16 tracks include 15 originals songs and a cover of Joni Mitchell's "Woodstock." The album opens with "Enigma," which serves as an introductory self-portrait into Maloney's musical world. She isn't a "political" songwriter per se, but her personally oriented subject matter often focuses on interior politics. For this record Maloney was joined by Ryan Hommel, who served as producer and musical director, created string arrangements, played guitar, and added backing vocals. Other musicians include Reed Sutherland on upright bass and vocals, Celaya Kirchner on violin and vocals, and Cynthia Tolson, Kasey Calebaugh, and Emma Hays Johnson in a string trio. Maloney's version of "Woodstock" not only showcases Maloney's impressive vocal range and musical dynamics. It also demonstrates how well the recording preserves both the location of her voice's primary emanation point combined with the hall's reverberance from the PA system as it adds an enveloping bloom and shimmer to the expansive soundstage. **Steven Stone**

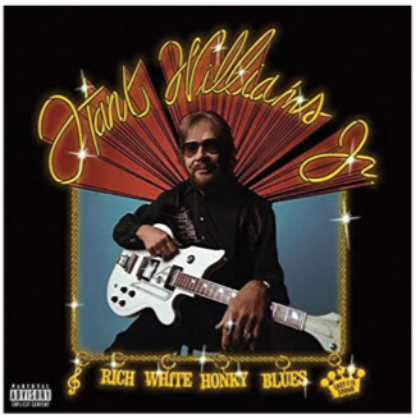
**Further Listening:** Mariel Buckley: *Everywhere I Used to Be*

MUSIC ●●●●◐ SONICS ●●●●○

**Danni Leigh: *Walkin' on a Wire.*** BFD/ Audium Nashville.

In 2007, Danni Leigh, then a promising, tradition-based newcomer to country music, took a Stateside powder, built a fan base overseas, and eventually came home to Virginia to raise a family. Now, with her first new recording in 15 years, she resurfaces in country genre radically altered from the one she left, but no matter—in a voice deeper and more commanding with age, she still sings it like she's sure Hank done it this way, or more to the point, the way Melba does it, meaning 70s country icon Melba Montgomery, who collaborated with Leigh on a steel-drenched, twangin' country plea to a straying paramour, "My Arms Stay Open Late," which closes the album as a scintillating bookend to Leigh's self-penned opener, "A Honky Tonk Song," a thumping tribute to "a way of life that's barely hanging on" and "to those who paved the way." In between these two gems, she nails every key emotional touchpoint, from the horn-fired heartbreaker, "You're Gonna Lose Him" to the southwestern-flavored (complete with mariachi horns) "Pain of Surrender," a master class in plumbing the depths of heartache and betrayal. Whew! Welcome back, indeed. **David McGee**

**Further Listening:** Lee Ann Womack: *The Lonely, The Lonesome & The Gone*; Patty Loveless: *Long Stretch of Lonesome*

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**Hank Williams Jr.: *Rich White Honky Blues.*** Easy Eye Sound.

Of the many positive things to say about this nigh-on-to-startling Hank Williams Jr. album, begin with declaring it one of the best blues albums of the year to date—yes, a blues album, and deep blues at that. Far more important, Hank Jr.'s daddy would surely approve of what the son he nicknamed Bocephus has wrought here. With a huge assist from Dan Auerbach, who produced the sessions at his own Nashville studio and becomes a compelling second voice to Hank's own with several piercing electric and slide guitar solos (plus dobro on Lightnin' Hopkins' "Jesus Won't You Come By Here"), Hank reaches way down into a well of soul conspicuously absent from his recent efforts. The man is simply reasserting himself as a force of nature again, whether it's on his own punishing blitzkrieg (the self-lacerating "I Like It When It's Stormy"); assertively taking no guff, lethally so, on Robert Johnson's ".44 Special Blues"; or getting the salacious most out of a couple of R.L. Burnside hill country blues gems (including "Georgia Women"). The fury is unceasing throughout, the sense of humor intact (and even subtle at points), and the artistry in full flower. Bocephus, don't fall off this mountain, y'hear? **DM**

**Further Listening:** Lightnin' Hopkins: *Blues in My Bottle*; Moreland & Arbuckle: *1861*

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**Kraftwerk: *Remixes.*** Parlophone/Rhino.

What band can still command our interest when their setlists have barely changed during their last few tours and virtually no new music has been released in the last two decades? Well, Kraftwerk for one, and these electronic music pioneers have had such a huge impact on music for 50-plus years that by now the issue of "relevance" seem like a moot point. Their latest release, available digitally since 2020 and more recently as a 3-LP set, offers one new track plus one or more remixes of eight songs. Several redos are the handiwork of Kraftwerk's own "Kling Klang" studio, including—read carefully—reworkings of "Robotnik" and "Robotronik." In 1999, a jingle Kraftwerk created for the World's Fair morphed into "Expo 2000," and *Remixes* offers seven different spins on this composition devoted to the brave new world the rest of us were gearing up for while the robotniks holed up inside the Kling Klang studio were already firmly ensconced in it. Available in two remixes here, "Radioactivity" suggests a through-line between unfettered technology and mass destruction. Rather than lose sleep over the endgame, however, plunge into the opening cut, "Non Stop," the one (almost) all-new track on the album, and start grooving to the apocalypse. **Jeff Wilson**

**Further Listening:** New Order: *Power, Corruption & Lies*; Gary Numan: *The Pleasure Principle*

MUSIC ●●●●○ SONICS ●●●○○

**The Cranberries: *Stars: The Best of 1992–2002.*** Island.

Even though I feel like Cranberries records are the ultimate CDs you can rely on for your car's CD binder, I also recommend having a vinyl copy of *Stars: The Best Of 1992–2002* for your home turntable. Originally released in 2002 on CD, *Stars* collects tracks spanning the first decade of the Irish alternative rock band's catalog, kicking off with their hit "Dreams," which instantly plunges the listener into jangle pop nostalgia. *Stars* balances deftly between the biggest Cranberries hits, like the grungy protest song "Zombie" and the sweet, orchestra-filled "Linger," while also including lesser-known, yet strong selections such as "Ridiculous Thoughts," which has eccentric vocals akin to a mid-90s contemporary, Alanis Morissette. The quieter sections on this vinyl reissue have a clear, crisp sound; however, some louder passages become perceptibly distorted. Despite this, listening to *Stars* is a lot of fun, and it's not just a nostalgia trip, as the album also stands as a document of the hopes and struggles of being a young person during The Troubles in the 1990s. This vinyl reissue would be a solid companion to your well-loved Cranberries CDs or an apt introduction to their greatest output. **Hannah Blanchette**

**Further Listening:** Elastica: *Elastica*; Liz Phair: *Exile in Guyville*; The Cranberries: *Wake Up and Smell the Coffee*

MUSIC ●●●●○ SONICS ●●●●○

**Peter Gabriel: *Live Blood.*** Virgin/Real World (3 LPs).

Finally, available on vinyl. Peter Gabriel and the 46-piece New Blood Orchestra, under the direction of Ben Foster, recorded this three-LP set during two days in 2011 at the Hammersmith Apollo in London. It is the soundtrack to a 3-D concert film released that year and the live counterpart to 2011's *New Blood*. You won't find grown-up versions of the bass-heavy, dance-floor hits "Steam" or "Sledgehammer" among these 22 tracks, but the prominent Gabriel songs "Biko," "Red Rain," "Solsbury Hill," "Don't Give Up," and "San Jacinto" sit alongside such lesser-known material as "The Rhythm of the Heat" and "Blood of Eden" (there also are five covers). The tasteful symphonic arrangements by John Metcalfe complement Gabriel's evocative vocals and those of his three guest vocalists. It's been 20 years since Gabriel dropped an album of new solo material, so *Live Blood*—expertly recorded by Grammy-winning engineer Will Shapland and cut for vinyl by Matt Colton at Metropolis Mastering—is a welcome addition to the catalog of one of rock's greatest solo artists. This half-speed master is pressed on 180-gram red vinyl and includes a code for free digital access to the album as either a 24- or 16-bit download. **Greg Cahill**

**Further Listening:** Peter Gabriel: *Growing Up Live*

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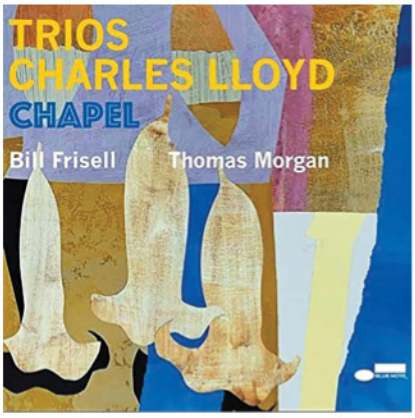
**Ella Fitzgerald: *Ella at the Hollywood Bowl: The Irving Berlin Songbook.*** Verve.

Recordings of live performances, at their best, feature a vivacity that flows from the give and take of the audience and the musicians, evolving as the music proceeds. In the case of this 1958 concert (recently discovered in the private collection of Verve founder Norman Granz) Ella sounds, at first, solid but a bit restrained. The excellent and lush sounding Paul Weston Orchestra (strings and all) also sound staid at first, certainly compared to the crackling energy of Ella's small ensemble sets on most of her other live recordings. But by the time the program gets to "Heat Wave," appropriately, the temperature begins to rise, and when a swinging "Cheek to Cheek" hits, we are off to the races. This is Ella at the peak of her powers; exuding magnificent tonality, insanely accurate pitch control, and a great actor's sense for the meaning of the words being sung. The recording itself, which was, apparently, not intended for commercial release, has an unusual and quite pleasing profile. The original tape is monaural, but it is subtly remixed to move the orchestra a little left and right and create a lane for Ella, per producer Gregg Field. There is plenty of space around Ella's voice, with a natural perspective of being in the audience. You will wish that you were there.

**Peter Burwasser**

**Further Listening:** *Jazz at the Philharmonic: The Ella Fitzgerald Set*

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**Charles Lloyd Trios: *Chapel.*** Blue Note.

Now in his eighties, Charles Lloyd may play with a bit less urgency and ferocity than in his youth, but his tone—on tenor sax and alto flute—is warmer and more luminescent than ever. With guitarist Bill Frisell creating beds of gleaming harmony and tapestries of chiming, coiling melodies, and with bassist Thomas Morgan maintaining equally variegated, pulsating undercurrents, Lloyd's imagination runs delightfully free if not wild. For nearly seven-and-a-half minutes on *Chapel*'s opener, Billy Strayhorn's "Blood Count," he explores the tune's possibilities while intuitively responding to his partners' subtle nudges. On his original "Song My Lady Sings," he doesn't come in until about halfway through the nine-minute performance, letting Frisell and Morgan show how they've become like a single musician over their recent years of duos collaboration. Recorded live in San Antonio's Elizabeth Huth Coates Chapel, this dreamy five-track album is the first of Lloyd's 2022 *Trio of Trios*, available individually and as a three-vinyl-LP box set. *Ocean* (with pianist Gerald Clayton and guitarist Anthony Wilson) and *Sacred Thread* (with guitarist Julian Lage and percussionist Zakir Hussain) follow in late August and late October. Expect nothing less than more magic from the master.

**Derk Richardson**

**Further Listening:** Paul Motian, Bill Frisell, Joe Lovano: *Time and Time Again*

MUSIC ●●●●○ SONICS ●●●●○

**Steve Cardenas/Ben Allison/Ted Nash: *Healing Power: The Music of Carla Bley.*** Sunnyside.

This intimate trio of guitarist Cardenas, bassist Allison, and saxophonist Nash has shown a remarkable chemistry on previous outings together — one a tribute reed player Jimmy Giuffre's drum-less trios of the 50s and 60s, another an interpretation of songs from Leonard Bernstein's *West Side Story* to commemorate the maestro's centennial. This time out they tackle the music of Carla Bley with sensitivity and a dash of verve, underscored by an uncanny sense of telepathy. Highlights include the ballad "Ida Lupino" and the tender, open-ended vignette "And Now, The Queen" featuring Nash on clarinet and Cardenas in ethereal Bill Frisell mode, the angular yet swinging "Donkey," and the frantic, free-boppish "Ictus," which finds Nash and Allison engaged in some animated conversation before Cardenas enters with dreamy tremelo-laden guitar. The poignant "Lawns" is rendered with requisite sensitivity and soul while the somber bossa, "Olhos de Gato," features lyrical solos from all three musicians, with Nash again focusing on clarinet. The jaunty "King Korn" is a three-way exploration by kindred spirits, and the title track, a smoldering blues, showcases Cardenas' bent-string licks and Nash's bold, Booker Ervin-esque tenor work.

**Bill Milkowski**

**Further Listening:** Allison/Cardenas/Nash: *Quiet Revolution*

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**Melody Gardot/Philippe Powell: *Entre eux deux.*** Decca.

Melody Gardot has plenty of fans at TAS, with two albums on our Super LP list and, as recently as 2021, a top ten recommendation (in the roots category, no less) for *Sunset in the Blue*. Her latest project was recorded in Paris, pianist (and sometimes vocalist) Philippe Powell lives in France, and some songs are sung in French. To declare *Entre eux deux* the sole province of Francophiles would be a mistake, however, as it will appeal to anyone who has a soft spot for dreamy, love-soaked ballads and duets that stand out for their intimacy. Gardot wrote or co-wrote eight of the compositions here, and some have the aura of future standards. Keeping it slow and quiet, Gardot and Powell make excellent use of space and employ the lightest brushstrokes in order to weave their spell. Sometimes, at the end of Gardot's lines, Powell sprinkles in a few notes that change the tone in a manner that's subtle yet extremely effective. Recorded at Studio Guillaume Tell in Paris, *Entre eux deux* captures such details with great clarity, not to mention the rich tonality of a Steinway piano and a voice that need but whisper to capture our hearts. **Jeff Wilson**

**Further Listening:** Monica Zetterlund/Bill Evans: *Waltz for Debby*; Shirley Horn: *A Lazy Afternoon*

MUSIC ●●●●○ SONICS ●●●●○

**Steve Davis: *Bluesthetic.*** Smoke Sessions.

Veteran trombonist/composer/educator Steve Davis came of age as a sideman in the bands of jazz greats Art Blakey, Jackie McLean, and Chick Corea. Since the mid-90s he has made several quality recordings as a leader. For his 21st recording as a leader, his fourth on Smoke Sessions, Davis gathered old friends in vibraphonist Steve Nelson, guitarist Peter Bernstein, pianist Geoffrey Keezer, bassist Christian McBride, and drummer Willie Jones III to perform ten Davis originals. Davis likes to dedicate many of his compositions to people and places that have influenced and inspired him and his music. The funky "Silver at Sundown" is for Horace Silver, with whom Davis worked for a week in 1998. The medium swinger "Bedford Strolle" is named after the street where he lives. The strong groove of "They Wore 44" represents many athletes who wore that number, including Hank Aaron, Jerry West, and Reggie Jackson. The uptempo closer "A Star for Chick" is for Corea, who passed in 2020. The trombone-guitar-vibes front line gives the music a fresh sound that's fueled by a powerful rhythm section, as Davis' "old friends" are all highly regarded bandleaders and players. A fine addition to the Davis discography. **Greg Turner**

**Further Listening:** Todd Marcus Jazz Orchestra: *In the Valley*

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**Tony Williams: *Play or Die.*** MIG Music.

When drummer Tony Williams joined Miles Davis' quintet in 1963 at the age of 17, the jazz cognoscenti marveled at his mix of intelligence, power, speed, and agility on the kit. His innovative and audacious way of cutting up the beat while still driving the band during his seven-year stint with Miles, including several landmark recordings, created a whole new school of drumming. By the time he left Miles to form the seminal fusion band Lifetime, his answer to Cream, Williams was courting a different muse. *Play or Die* was his final flirtation with rock music before returning to acoustic jazz in the mid-80s with Blue Note. Recorded in May 1980 in Stuttgart, Germany, it was never released in the States. As it turns out, it wasn't worth the wait. While Williams' jaw-dropping prowess is on full display on extended tracks like "The Big Man," "Beach Ball Tango," and "Jam Tune," the accompaniment provided by keyboardist Tom Grant and former Frank Zappa and Missing Persons bassist Patrick O'Hearn is so steeped in late 70s-early 80s synth-pop of Kraftwerk and Gary Numan that it doesn't hold up. Recommended for Tony completists only. **BM**

**Further Listening:** Tony Williams: *Joy of Flying*; Tony Williams Lifetime: *Emergency!*

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**Pasquale Grasso: *Be-Bop!*** Sony Masterworks.

Last year I witnessed a small club performance by Samara Joy, the #1 rising star in the jazz vocal world. That evening it became clear that I was witnessing a singular talent with the ability to make jazz standards sound as fresh as the day they were written. Her accompanists that evening included another exceptional young musician, 33-year-old jazz guitarist Pasquale Grasso, who played with a fluidity that was stunning. Even on the most byzantine lines his phrasing was immaculate. For *Be-Bop!* Grasso dives headfirst into early bop, performing such well-known standards as "A Night in Tunisia," "Groovin' High," "Quasimodo," "Shaw Nuff," "Ornithology" and "Ruby, My Dear," all written during a period when jazz was bursting with energy and creativity. Deftly accompanied by bassist Ari Roland and drummer Keith Balla (and joined by Joy for "I'm in a Mess"), Grasso is squarely "in the tradition." Straight bebop was but a fraction of what Grasso performed during the Samara Joy concert, and it seems safe to assume that a fuller picture of Grasso is forthcoming. But young jazz musicians affirming in no uncertain terms that the roots of modern jazz are flowing through their veins is no small thing. If you love bop, check out *Be-Bop!* **JW**

**Further Listening:** Archie Shepp/NHØP: *Looking at Bird*; Keith Jarrett: *Bop-Be*

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**WeFreeStrings: *Love in the Form of Sacred Outrage.*** ESP-Disk.

Founded in 2011 by violist-composer Melanie Dyer, WeFreeKings (the name a riff on Rahsaan Roland Kirk's "We Free Kings") shapeshifts from a sextet with Dyer, violinists Gwen Laster and Charles Burnham, cellist Alex Waterman, bassist Ken Filiano, and drummer Michael Wimberly on the opening and closing pieces, down to the trio of Dyer, Laster, and Filiano on the two middle tracks. Both alignments are radical departures from any conventional jazz or chamber format, and Dyer's three compositions are equally rebellious: a 25-plus-minute, six-movement suite named for the late writer Amiri Baraka, the title track dedicated to civil rights leader Fannie Lou Hamer, and "Propagating the Same Type of Madness, that uh..." for assassinated Black Panther Fred Hampton. The music wheels, sweeps, and soars. The bowed strings voice bitterness, rumination, and exultation and veer from whispers to screams, from quiet conversations through passages of swing to orchestral swells. Filiano works the bottom end busily, and Wimberly, although a bit recessed in the mix, adds rattles and rumbles that broaden the colorful panoramas. For all the spirit of protest, there is much sweetness here, too, especially in the way the trio caresses the delicate structures of Baba Andrew "The Black" Lamb's "Pretty Flowers." **DR**

**Further Listening:** Leroy Jenkins: *Mixed Quintet*

MUSIC ●●●●○ SONICS ●●●●○

**Barney Wilen: *Zodiac.*** We Are Busy Bodies (LP).

In the absence of available and affordable copies, this 1966 release by respected French saxophonist Wilen garnered interest among collectors as a lesser-known stage in the development of free jazz. With this reissue it is likely to be better understood as an accessible album that for the most part leans more toward other mid-60s exploratory modern jazz sounds, such as the piano-less *Out to Lunch* by Eric Dolphy (largely due to the great Karl Berger's contributions here on vibes), Paul Bley's lyrical mid-1960s trios and quartets, and the exotic jazz of Yusef Lateef. As expected, the album has 12 tracks for the signs of the Zodiac, including an unusual double tracking of Wilen on "Gemini" and more aggressive playing on "Leo." This quality pressing by We Are Busy Bodies is the first legitimate issue since the record's original release and was made with the collaboration of the Wilen estate and Barney's son Patrick. In the absence of available master tapes, this record was sourced from an original pressing, but the results suggest that great care was taken to avoid either an excessive midrange focus or the period-incorrect exaggeration of very high and low frequencies that undermine many such projects. **Mark Milano**

**Further Listening:** Art Blakey's Jazz Messengers w/Barney Wilen: *Les Liaisons Dangereuses*; Barney Wilen: *La Note Bleue*

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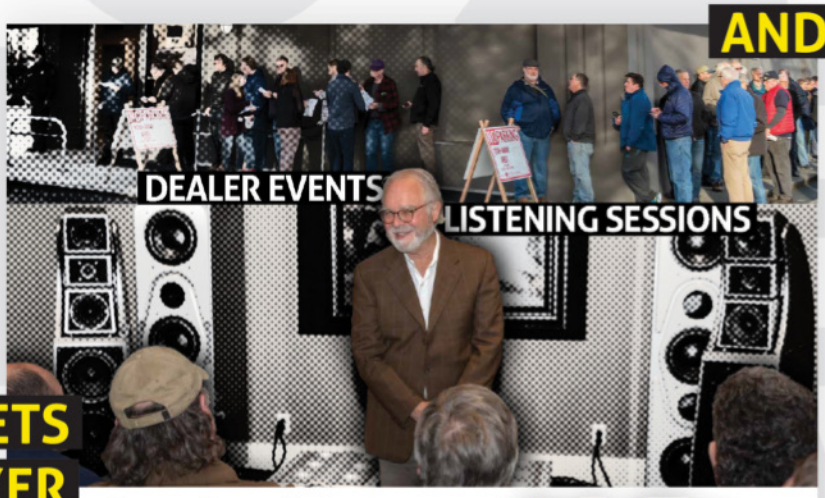


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MUSIC ●●●●● SONICS ●●●●○

**Strauss.** Leipzig Gewandhaus & Boston Symphony Orchestras, Nelsons; Wang, Ma. DG (7 CDs).

For this album, Andris Nelsons conducts the Leipzig Gewandhaus and Boston Symphony Orchestras in most of the orchestral music of Richard Strauss. Nelsons' principal (only?) competition in this kind of survey is the renowned Strauss specialist Rudolf Kempe (EMI). Kempe's recordings were well received critically, but you can make the case that he underplayed the dynamics in these flamboyant orchestral showpieces. That begs the question whether Nelsons has a similar natural affinity for Strauss' music but does not seek to suppress the inherently spectacular and colorful nature of the music. Collections like this do not typically produce the most highly recommended recordings of everything, but they should be expected to reach a consistently high level, and that proves to be the case.

Nelsons plays *Don Juan* and *Till Eulenspiegel* with straightforward, moderate tempos and no suppression of dynamic contrasts. Similarly, *Death and Transfiguration* has conventional tempos and good sound. It is not white hot in the Toscanini sense, but ranks with the best available performances in modern sound. The irregular timpani presumably representing the heartbeat of the dying man are clearly articulated at various volumes. *Don Quixote* is generally excellent. Strauss wrote the solo parts for the orchestra principals, so there is always the question whether Yo-Yo Ma's oversized musical personality will not work, but for the most part he blends with the Boston Symphony Orchestra.

*Ein Heldenleben* perhaps lacks the last word in power and florid Romanticism, or are we hearing the difference between the Boston Symphony Orchestra and the Leipzig Gewandhausorchester? "The Hero's Battlefield" is spectacular, and the ending is stunningly beautiful with gorgeous French horn and violin solos leading to the final Straussian cadence. *Also Sprach Zarathustra* is slower than Reiner's famous performances (RCA). The organ pedal in the opening is formidable and the timpani are powerful but somewhat distant, which makes them not quite as potent as Zubin Mehta on his amazing sounding Decca recording with the Los Angeles Philharmonic.

The *Burleske* with the elegant pianism of Yuja Wang has never sounded better. The *Intermezzo* Interludes are charming. The Dance of the Seven Veils is suitably sensuous, but not quite the sound spectacular that it could be. *Metamorphosen* is a bit light in mood and texture, and is not in the same league as Herbert von Karajan and the Berlin Philharmonic. On the other hand, *An Alpine Symphony*, the *Sinfonia Domestica*, and the Symphonic Fantasie from *Die Frau Ohne Schatten* are sensational. Nelsons is not reluctant to showcase their florid Romanticism and pictorial orchestration. "On the Summit" and "Vision" make a stunning climax of *An Alpine Symphony* followed by the wildest "Thunderstorm" that I have ever heard. For once the organ is given its full prominence in "Sunset" and at the end. The *Der Rosenkavalier* Suite is generally okay, but a little slow, subdued, and rhythmically slack in places. The *Festival Prelude* makes a suitably massive sound, as it should.

This is an extremely valuable collection of generally excellent performances with good sound that does not quite reach audiophile level. It should satisfy any Strauss fan even though there are inevitably individual performances that are interpretively or sonically better elsewhere. **Arthur Lintgen**

**Further Listening:** Strauss Complete Orchestral Works (Kempe, Staatskapelle Dresden/Warner Classics)

MUSIC ●●●●◐ SONICS ●●●●◐

**Williams: Violin Concerto No. 2 & Selected Film Themes.** Anne-Sophie Mutter, violin. Boston Symphony Orchestra, John Williams, conductor. DG.

By living to be 90, and writing some of the greatest film music ever, John Williams has gotten to the point of being signed to a deluxe recording contract by Deutsche Grammophon and invited to the podiums of the Vienna and Berlin Philharmonics to newly record the best of that film music for an adoring public. But Williams has long been a composer of concert works, and very good ones at that. The count includes a horn concerto for the late Dale Clevenger, a marvelous tuba concerto (think Jabba the Hutt) for Chester Schmitz and the Boston Pops, several wonderful works for cellist Yo-Yo Ma, and this new violin concerto, a substantial 35-minute piece written for Anne-Sophie Mutter and performed by her here with the BSO conducted by Williams. The work is not a game-changer, but it *is* lovely, and it points to a resurgence of dramatic, generously expressive concert music in idioms approachable by today's audiences. Coupled with arrangements made for Mutter of the love themes from three classic Williams soundtracks—*The Long Goodbye*, *The Empire Strikes Back*, and *Raiders of the Lost Ark*—it is brilliantly performed and warmly recorded. **Ted Libbey**

**Further Listening:** Williams: Tuba Concerto (Nulty, Detroit SO, Slatkin/Naxos)

MUSIC ●●●●◐ SONICS ●●●●●

**Liszt: Piano Concertos Nos. 1 and 2; Sonata in B Minor.** Ullman, BBC Symphony Orchestra, Litton. Rubicon Classics.

For the past 60 years, the go-to recording of these concertos was the one by Sviatoslav Richter and Kirill Kondrashin, made with the LSO in 1961. There have been many good recordings of the sonata, including those of Stephen Hough and Krystian Zimerman—but for me, none will surpass what I heard when Radu Lupu performed the work at a recital in Martigny, Switzerland in the 1980s—every note transcendent. Well, it's time to make room at the top for British pianist Alexander Ullman, whose accounts here are magisterial and very much in the grand manner. His playing is brilliant, superbly articulated, and above all, tastefully musical. This is Litton's second recording of the Liszt concertos, and it is rich in poise and poetry as well as excitement. He draws expressive work from the BBC players, especially the orchestra's outstanding first-desk soloists, delivering accounts that are hot, but never overheated. The recording takes full advantage of the transparent, wondrously "live" sound of BBC's Maida Vale studio in the concertos, and of the superb acoustic of London's Henry Wood Hall in the sonata. The pick-up on Ullman's piano is excellent in both venues. **TL**

**Further Listening:** *Russian Ballet Music* (Ullman/Rubicon); Liszt: Piano Concertos (Richter, Kondrashin/Philips)

MUSIC ●●●●◐ SONICS ●●●●●

**Shostakovich: String Quartets Vol. 1.** Quartetto Noûs. Brilliant (2 CDs).

This new cycle is off to a good start. The Quartetto Noûs has an appealing tone: not one thin or squealing note. The sonics are the definition of clarity: intimate but not uncomfortable, with each instrument perfectly represented across its range. Props to engineer Raffaele Cacciola for one of the best-sounding quartet recordings I've ever heard. Shostakovich tends to be more personal in his 15 quartets than in his symphonies, though the Third Quartet originally had war-related movement titles and the Eighth is dedicated "to the victims of fascism and the war." Parts are still acerbic and violent, but humor, reflection, and even attenuated grieving and unrequited love are portrayed. These earlier quartets are generally outgoing and might be just the thing for people who like aspects of Shostakovich's style but find the symphonies too angsty. Quartetto Noûs doesn't try to tear listeners limb from limb: they convey unease and solitude without putting too much stress on the listener. Only the Eighth Quartet and the finale of the Ninth are too smooth, lacking suspense, terror, and electricity. No group hits 15 home runs, though, and since there's an abundance of good Eights to be had, I'm not complaining too much. **Stephen Estep**

**Further Listening:** Shostakovich: Quartet No. 8 (Emerson String Quartet/ Deutsche Grammophon)

MUSIC ●●●●◐ SONICS ●●●●◐

**Koechlin: *The Seven Stars' Symphony; Vers la voûte étoilée.*** Sinfonieorchester Basel, Ariane Matiakh. Capriccio.

A woodwind line ascends in fourths and lands on pillowy strings, taking us up among the stars. No, not the celestial kind: this symphony is about Hollywood stars: Douglas Fairbanks, Lilian Harvey, Greta Garbo, Clara Bow, Marlene Dietrich, Emil Jannings, and Charlie Chaplin. French composer Charles Koechlin (1867–1950) studied with Massenet and Faure alongside Enesco, Schmitt, and Hahn, and formed a contemporary music society with Schmitt and Ravel. The "spiritual grace" and "insolent beauty" of seven actors inspired this 43-minute symphony from 1933. Koechlin is more interested in building a climax out of layered bits of counterpoint than in imitating Ravel's grand sweeping gestures, and nearly pointillist passagework stands in stark contrast to Debussy's steam baths. The portrayals can be delicate, detached, bubbly, or downright chilly, but the impressionist's love of color softens the edges. There's less of a big emotional payoff à la *La Valse*, and the fuse burns a little too slowly even in the triumphs of the Charlie Chaplin movement, but the symphony is still fascinating. *Vers la voûte étoilée* has an extended glow that really satisfies. Fine playing and detailed sound. **SE**

**Further Listening:** Dutilleux: Symphony No. 1 (Deutsche Staatsphilharmonie Rheinland-Pfalz, Steffens)

*People are generally surprised by the significant difference in natural spaciousness that IsoAcoustics products deliver.*

# Q&A

## Dave Morrison

### IsoAcoustics

Neil Gader

**How did your interest in the high end begin?**

I was interested in music from a very young age, and I became more focused on higher-fidelity audio in the 80s, thanks to the enthusiasm I shared with my coworkers at the Canadian Broadcasting Corporation (CBC). The broadcast engineers were very up to date about the latest audio and video technologies, and this spilled over into our personal lives.

**What distinguishes the high end from traditional home audio?**

High end delivers much more detail, clarity, depth, and timbre. There's a greater sense of space and more of an emotional experience than systems designed to deliver content and background ambiance.

**What gear made up your first high-end audio system?**

Luxman, PSB speakers, and Technics direct-drive turntable in the 80s.

**How did that enthusiasm develop into a career in audio? And how did it lead you to IsoAcoustics?**

I was working on the project team of the CBC Radio Drama Studio project in the mid-80s, and we were all impressed with the PSB speakers installed in the live studio space. I bought a pair for myself. I had the opportunity to meet Paul Barton (PSB founder) and he offered to come to my home one evening when I was setting the speakers up. That evening he described the challenges in speaker design and testing at the NRC, and he made a comment that really stuck with me. He said, "One of the largest variables is out of my control." He was referring to placement and how the speakers are used, and while following his incredible attention to detail and watching the pink-noise curves change as we moved the speakers, a light went on for me. I became really intrigued with the interaction between speakers and their boundaries.

Over the years, I experimented with numerous isolation-product ideas, built prototypes, and began testing at the NRC. I found that I was able to adjust and tune designs for performance and weight capacity and had developed something that could be patented. Two manufacturers were interested in licensing the design, but I decided to move ahead to develop, manufacture, and distribute the products myself, and IsoAcoustics was born.

**What is the greatest misunderstanding audiophiles have about isolation products?**

There's a popular belief that isolation products will mitigate the vertical transfer of vibration to/from the supporting surface but provide limited lateral support, resulting in losses such as bass suck-out, often referencing Newton's 3rd Law of Reciprocal Motion. IsoAcoustics products fit in the "isolation" genre, but their hybrid multi-part construction maintains lateral stability and accuracy throughout the entire audio spectrum. IsoAcoustics products do not alter or colorize the audio output of a speaker, as confirmed by the manufacturers that are integrating IsoAcoustics into their products.

**What interesting fact or aspect about IsoAcoustics might surprise audiophiles?**

I think everyone understands that a speaker can excite the supporting surface or that structure-borne noise can cause anomalies in the listening space and upset the neighbors, but an issue that is generally misunderstood is that energy will hit the supporting surface and be conducted back up into the speaker. Any direct connection with any rigid material or combination of rigid materials will conduct in both directions, with energy coming back up into the speaker resulting in smear and reduced clarity and definition. When any of these artifacts is conducted back to two speakers, the result will be perceived between them—the soundfield collapses and becomes two-dimensional. IsoAcoustics products mitigate this energy resulting in a very open and transparent soundstage. People are generally surprised by the significant difference in natural spaciousness that IsoAcoustics products deliver.

**What are the greatest challenges confronting the high-end industry in the next few years?**

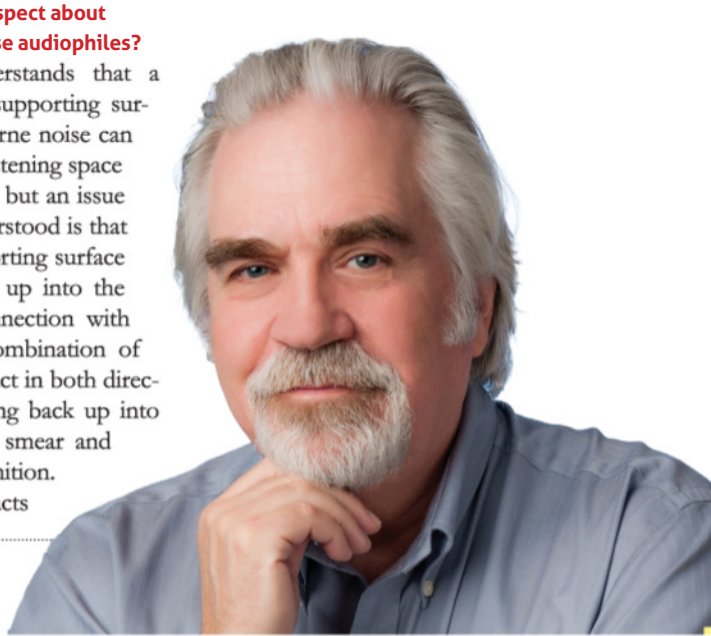
I'm really excited about the growth in immersive sound, and we are developing products that complement speakers to deliver that same clarity and natural spatial feel that we have established in our other products. This is a growing segment, with great potential.

**Outside of audio, what do you do for fun?**

I enjoy cars, motorsports, playing the guitar, and reading.

**What inspires you about your work?**

It's very satisfying to develop products that make a profound difference and have the opportunity to work with creative people in the audio and music industries. I enjoy working with other manufacturers to integrate IsoAcoustics products, working with the scientists at the NRC, meeting audio enthusiasts, and sharing this journey with my sons. This is a wonderful crossover space between the arts and sciences.



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Neil Gader, *The Absolute Sound*, Issue 275.

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